**Study 2 Results**

**Missing data.**

Table # below shows the number and percentage of missing cases for each of the study’s key variables. Age had the highest percentage of missing cases (9%), while the remaining variables had less than 2% of cases missing. Missing values on these variables were imputed prior to analyses using the `smcfcs` function in R to implement Substantive Model Compatible Fully Conditional Specificationmultiple imputation (discussed in the Planned Analysis section). Five imputed data sets were produced for the main analyses.

**Table #**

*Number of Missing Scores per Variable*

| Variable | *N* Missing | % Missing |
| --- | --- | --- |
| Age | 103 | 9.09% |
| Consumer Behaviors | 18 | 1.59% |
| Self-deceptive Enhancement | 15 | 1.32% |
| Impression Management | 14 | 1.24% |
| Biospheric Values | 14 | 1.24% |
| Egoistic Values | 14 | 1.24% |
| Altruistic Values | 13 | 1.15% |
| Hedonic Values | 13 | 1.15% |
| Gender | 0 | 0% |
| In-group Identification | 0 | 0% |
| Clothing Interest | 0 | 0% |
| Framing Condition | 0 | 0% |
| Norm Condition | 0 | 0% |
| Consumer Intentions | 0 | 0% |

*Note.* Total sample size was *n* = 1,133.

**Descriptive statistics.**

Descriptive statistics for the variables with no missing data are provided in Table #, and for the variables with missing data are provided in Table # across each imputed data set (missing gender and consumer behaviors). As shown in Figure #, scores on each variable tended to be approximately normally distributed and centered around the midpoint of each scale with the exception of biospheric values, altruistic values, hedonic values, and age. Scores on biospheric values, altruistic values, and hedonic values were substantially negatively skewed. This indicates that the sample highly endorsed these values and there was not much representation of individuals who score below the midpoint on these scales. Age was also substantially positively skewed with the large majority of the sample being between the ages of 18 and 25.

**Table #**

*Descriptive Statistics for Continuous Variables with No Missing Data*

| Variable | *n* | *M* | *SD* | *Skew* | *Min* | *Max* | *Mdn* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Clothing Interest | 1133 | 3.13 | 0.80 | -0.18 | 1 | 5 | 3.15 |
| In-group Identification | 1133 | 4.64 | 1.01 | -0.27 | 1 | 7 | 4.64 |
| Consumer Intentions | 1133 | 4.41 | 1.19 | -0.16 | 1 | 7 | 4.44 |

**Table #**

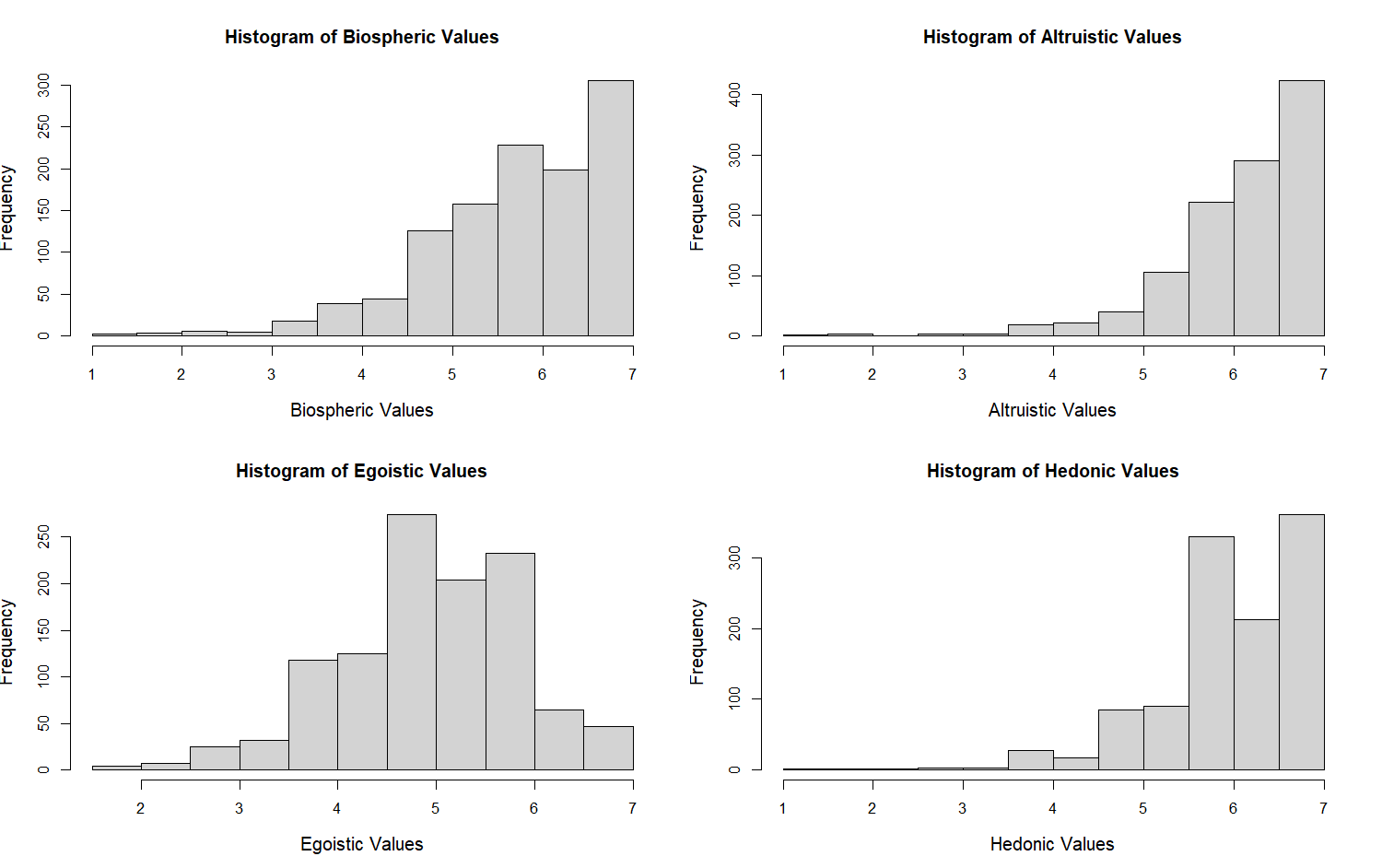
*Descriptive Statistics for Continuous Variables with Missing Data across Each Imputed Set*

| Imputed Set | Variable | Original *n* | *# of Imputed* | *M* | *SD* | *Skew* | *Min* | *Max* | *Mdn* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Biospheric Values | 1,119 | 14 | 5.85 | 1.00 | -1.08 | 1 | 7 | 6 |
| Altruistic Values | 1,120 | 13 | 6.21 | 0.80 | -1.91 | 1 | 7 | 6.50 |
| Egoistic Values | 1,119 | 14 | 5.00 | 0.92 | -0.39 | 1 | 7 | 5 |
| Hedonic Values | 1,120 | 13 | 6.05 | 0.79 | -1.44 | 1 | 7 | 6.33 |
| Self-deceptive Enhancement | 1,118 | 15 | 3.72 | 0.85 | 0.14 | 1 | 7 | 3.72 |
| Impression Management | 1,119 | 14 | 4.01 | 0.85 | 0.26 | 1 | 7 | 4 |
| Age | 1,030 | 103 | 19.8 | 1.93 | 4.65 | 18 | 50 | 19.18 |
| 2 | Biospheric Values | 1,119 | 14 | 5.85 | 0.99 | -1.08 | 1 | 7 | 6 |
| Altruistic Values | 1,120 | 13 | 6.20 | 0.81 | -1.89 | 1 | 7 | 6.50 |
| Egoistic Values | 1,119 | 14 | 4.99 | 0.92 | -0.38 | 1 | 7 | 5 |
| Hedonic Values | 1,120 | 13 | 6.05 | 0.80 | -1.43 | 1 | 7 | 6.33 |
| Self-deceptive Enhancement | 1,118 | 15 | 3.72 | 0.86 | 0.15 | 1 | 7 | 3.72 |
| Impression Management | 1,119 | 14 | 4.01 | 0.85 | 0.26 | 1 | 7 | 4 |
| Age | 1,119 | 14 | 19.87 | 1.93 | 4.68 | 18 | 50 | 19 |
| 3 | Biospheric Values | 1,119 | 14 | 5.85 | 1.00 | -1.10 | 1 | 7 | 6 |
| Altruistic Values | 1,120 | 13 | 6.21 | 0.81 | -1.91 | 1 | 7 | 6.50 |
| Egoistic Values | 1,119 | 14 | 5.00 | 0.92 | -0.39 | 1 | 7 | 5 |
| Hedonic Values | 1,120 | 13 | 6.05 | 0.79 | -1.44 | 1 | 7 | 6.33 |
| Self-deceptive Enhancement | 1,118 | 15 | 3.72 | 0.85 | 0.16 | 1 | 7 | 3.72 |
| Impression Management | 1,119 | 14 | 4.01 | 0.85 | 0.25 | 1 | 7 | 4 |
| Age | 1,119 | 14 | 19.90 | 1.94 | 4.57 | 18 | 50 | 19.29 |
| 4 | Biospheric Values | 1,119 | 14 | 5.85 | 0.99 | -1.10 | 1 | 7 | 6 |
| Altruistic Values | 1,120 | 13 | 6.21 | 0.81 | -1.90 | 1 | 7 | 6.50 |
| Egoistic Values | 1,119 | 14 | 5.00 | 0.92 | -0.40 | 1 | 7 | 5 |
| Hedonic Values | 1,120 | 13 | 6.06 | 0.79 | -1.45 | 1 | 7 | 6.33 |
| Self-deceptive Enhancement | 1,118 | 15 | 3.72 | 0.85 | 0.12 | 1 | 7 | 3.72 |
| Impression Management | 1,119 | 14 | 4.00 | 0.85 | 0.24 | 1 | 7 | 4 |
| Age | 1,119 | 14 | 19.88 | 1.94 | 4.63 | 18 | 50 | 19 |
| 5 | Biospheric Values | 1,119 | 14 | 5.85 | 1.00 | -1.11 | 1 | 7 | 6 |
| Altruistic Values | 1,120 | 13 | 6.21 | 0.81 | -1.91 | 1 | 7 | 6.50 |
| Egoistic Values | 1,119 | 14 | 4.99 | 0.92 | -0.39 | 1 | 7 | 5 |
| Hedonic Values | 1,120 | 13 | 6.05 | 0.79 | -1.45 | 1 | 7 | 6.33 |
| Self-deceptive Enhancement | 1,118 | 15 | 3.72 | 0.86 | 0.15 | 1 | 7 | 3.72 |
| Impression Management | 1,119 | 14 | 4.00 | 0.85 | 0.26 | 1 | 7 | 4 |
| Age | 1,119 | 14 | 19.89 | 1.92 | 4.69 | 18 | 50 | 19.14 |

**Figure #**

*Histograms for the Continuous Variables* **A graph of a number of people

Description automatically generated**

****

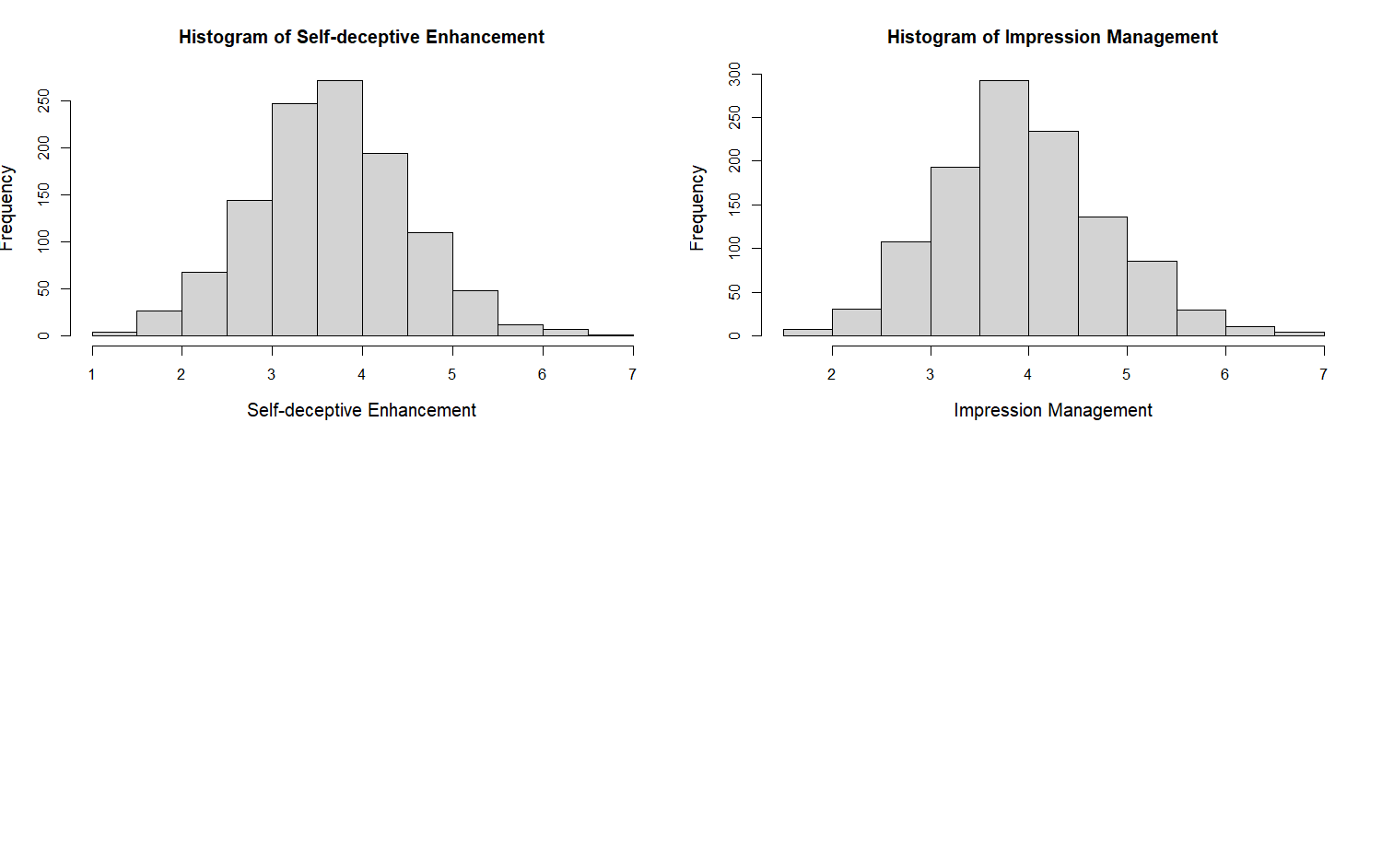
****

Table # shows the final sample size per framing by norm condition. Each combination of framing and norm condition had between 64-91 participants, and there was an average of 75 participants per condition.

**Table #**

*Sample Size per Condition*

|  | Framing Condition | | |  |
| --- | --- | --- | --- | --- |
| Norm Condition | Control | Pro-environmental | Self-enhancing | Total *n* per Norm |
| Control | 79 | 73 | 79 | 231 |
| Descriptive Norm | 71 | 76 | 80 | 227 |
| Convention | 66 | 85 | 77 | 228 |
| Social Norm | 91 | 67 | 64 | 222 |
| Moral Norm | 68 | 80 | 77 | 225 |
| Total *n* per Framing | 375 | 381 | 377 |  |

*Note.* Total sample size was *n* = 1,133.

**Linear Regression Analysis for Pro-environmental****Consumer Intentions.**

A linear regression analysis was performed to analyze the effects of framing condition, norm condition, values, in-group identification, and the interaction effects between these predictors, on consumer intentions while also controlling for socially desirable responding, interest in clothing, gender, and age. To perform the analysis using the multiply imputed data, the `lm` function was used in tandem with the `with` function in R. Together, these functions perform the regression analysis on each of the five imputed data sets. Then, the `pool` function was used to aggregate the final results across the five individual models. The `mi.anova` function was used to produce an ANOVA table of these pooled results, which is shown in Table #.

**Table 2**

*Pooled ANOVA Table for Model Predicting Pro-environmental Consumer Intentions*

|  | *SS* | *df1* | *df2* | *F* | *p* | η2 | ηp2 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Framing Condition | 4.45 | 2 | 277911.15 | 1.94 | 0.144 | 0.003 | 0.004 |
| Norm Condition | 6.52 | 4 | 71957.17 | 1.41 | 0.227 | 0.005 | 0.005 |
| Biospheric Values | 69.70 | 1 | 182541.21 | 60.76 | <.001 | 0.048 | 0.056 |
| Altruistic Values | 1.79 | 1 | 4948.63 | 1.48 | 0.224 | 0.001 | 0.002 |
| Egoistic Values | 55.16 | 1 | 117647.58 | 48.03 | <.001 | 0.038 | 0.044 |
| Hedonic Values | 3.39 | 1 | 10965.18 | 2.88 | 0.090 | 0.002 | 0.003 |
| Ingroup Identification | 0.80 | 1 | 15534.19 | 0.67 | 0.413 | 0.001 | 0.001 |
| Self-deceptive Enhancement | 7.50 | 1 | 10820.41 | 6.41 | 0.011 | 0.005 | 0.006 |
| Impression Management | 0.15 | 1 | 48583.18 | 0.12 | 0.732 | 0.000 | 0.000 |
| Clothing Interest | 0.01 | 1 | 3781093.85 | 0.01 | 0.942 | 0.000 | 0.000 |
| Gender | 4.35 | 1 | 2572.87 | 3.60 | 0.058 | 0.003 | 0.004 |
| Age | 5.96 | 1 | 71.04 | 3.63 | 0.061 | 0.004 | 0.005 |
| Framing x Norm | 5.70 | 8 | 55071.52 | 0.61 | 0.767 | 0.004 | 0.005 |
| Framing x Biospheric Values | 0.74 | 2 | 3277.29 | 0.27 | 0.761 | 0.001 | 0.001 |
| Norm x Biospheric Values | 11.75 | 4 | 97395.31 | 2.56 | 0.037 | 0.008 | 0.010 |
| Framing x Altruistic Values | 1.29 | 2 | 6519.70 | 0.52 | 0.592 | 0.001 | 0.001 |
| Norm x Altruistic Values | 9.15 | 4 | 9084.58 | 1.96 | 0.098 | 0.006 | 0.008 |
| Framing x Egoistic Values | 0.48 | 2 | 15139.30 | 0.19 | 0.831 | 0.000 | 0.000 |
| Norm x Egoistic Values | 2.16 | 4 | 8536.54 | 0.44 | 0.776 | 0.001 | 0.002 |
| Framing x Hedonic Values | 2.18 | 2 | 21454.97 | 0.93 | 0.396 | 0.002 | 0.002 |
| Norm x Hedonic Values | 8.19 | 4 | 22945.86 | 1.76 | 0.133 | 0.006 | 0.007 |
| Framing x Ingroup Identification | 0.88 | 2 | 493256.84 | 0.38 | 0.685 | 0.001 | 0.001 |
| Norm x Ingroup Identification | 1.08 | 4 | 363457.46 | 0.23 | 0.920 | 0.001 | 0.001 |
| Framing x Norm x Biospheric Values | 17.32 | 8 | 345248.97 | 1.89 | 0.057 | 0.012 | 0.014 |
| Framing x Norm x Altruistic Values | 11.73 | 8 | 16665.70 | 1.26 | 0.259 | 0.008 | 0.010 |
| Framing x Norm x Egoistic Values | 11.33 | 8 | 28094.95 | 1.22 | 0.280 | 0.008 | 0.009 |
| Framing x Norm x Hedonic Values | 6.00 | 8 | 5510.08 | 0.63 | 0.757 | 0.004 | 0.005 |
| Framing x Norm x Ingroup Identification | 13.04 | 8 | 13143.09 | 1.40 | 0.190 | 0.009 | 0.011 |
| Residual | 1184.90 |  |  |  |  |  |  |

The `mi.anova` function calculates the denominator degrees of freedom for multiply imputed data using the formula *K*-3/M(*M* – 1)(1 + ARIV-1)2 where *K* is the numerator degrees of freedom, *M* is the number of multiple imputations performed, and ARIV is the average relative increase in variance due to the presence of missing data. For an accessible discussion of how these degrees of freedom are calculated, see Grund, Lüdtke, and Robitzsch (2016), and for the original derivation of the degrees of freedom formula, see Li et al. (1991).

***Main effect of framing condition.***

The overall effect of framing condition was not significant in the above model, *F*(2, 277911.15) = 1.94, *p* = .144, ηp2 = .004. Because there was an a priori hypothesis regarding how specific levels of framing condition compare to one another, this effect was still followed up by simple effects analyses. Estimated marginal means (EMMs) were calculated using the `emmeans` function in R. Table # shows the EMMs for each level of framing condition. These EMMs are also visually depicted in Figure # below.

**Table 8**

*Estimated Marginal Means for Pro-environmental Consumer Intentions Across Each Framing Condition*

| Framing Condition | *EMM* | *SE* | *df* | *95%CI EMM* |
| --- | --- | --- | --- | --- |
| Control Framing | 4.33 | 0.06 | 1038 | [4.21, 4.44] |
| Pro-environmental Framing | 4.48 | 0.06 | 1038 | [4.37, 4.59] |
| Self-enhancing Framing | 4.36 | 0.06 | 1038 | [4.25, 4.47] |

**Figure #**

*Visualization of the EMMs for Pro-environmental Consumer Intentions Across Each Framing Condition*

A diagram of a diagram

Description automatically generated

To compare EMMs across conditions, the `contrast` function was used in R, along with the `confint` and `eff\_size` functions to produce confidence intervals and effect sizes. As shown in Table #, pro-environmental consumer intentions were highest in the pro-environmental framing condition, but its differences from the control framing condition, *t*(1038) = 1.87, *p* = .062, *d* = 0.14, and from the self-enhancing framing condition, *t*(1038) = 1.46, *p* = .145, *d* = 0.11, were both non-significant. The overall difference between the self-enhancing framing and the control framing condition was also non-significant and the effect size was close to zero, *t*(1038) = 0.41, *p* = .679, *d* = 0.03.

**Table 9**

*Comparison of Pro-environmental Consumer Intentions Between Framing Conditions*

| Contrast | *EMM Difference* | *95%CI*  *EMM Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Self-enhancing vs Control | 0.03 | [-0.13, 0.19] | 0.08 | 1038 | 0.41 | 0.679 | 0.03 |
| Pro-environmental vs Control | 0.15 | [-0.01, 0.31] | 0.08 | 1038 | 1.87 | 0.062 | 0.14 |
| Pro-environmental vs self-enhancing | 0.12 | [-0.28, 0.04] | 0.08 | 1038 | 1.46 | 0.145 | 0.11 |

***Main effect of norm condition.***

The effect of norm condition was not significant in the overall model, *F*(4, 71957.17) = 1.41, *p* = .227, ηp2 = .005. Because there was an a priori hypothesis regarding how specific levels of norm condition compare to one another, this effect was still followed up by simple effects analyses. Table # shows the EMMs for each level of norm condition, which are also visually depicted in Figure # below.

**Table #**

*Estimated Marginal Means for Pro-environmental Consumer Intentions Across Each Norm Condition*

| Framing Condition | *EMM* | *SE* | *df* | *95%CI EM Mean* |
| --- | --- | --- | --- | --- |
| Control Norm | 4.43 | 0.07 | 1038 | [4.29, 4.58] |
| Descriptive Norm | 4.40 | 0.07 | 1038 | [4.26, 4.55] |
| Convention | 4.50 | 0.07 | 1038 | [4.36, 4.65] |
| Social Norm | 4.28 | 0.08 | 1038 | [4.13, 4.42] |
| Moral Norm | 4.33 | 0.08 | 1038 | [4.18, 4.48] |

**Figure #**

*Visualization of the EMMs for Pro-environmental Consumer Intentions Across Each Norm Condition*

A line graph with text below

Description automatically generated

As shown in Table #, overall pro-environmental consumer intentions were highest in the convention condition. However, as shown in Table #, the EMM for the convention condition was non-significantly different from the EMM for the control norm condition, *t*(1038) = 0.68, *p* = .499, *d* = 0.07. Additionally, overall pro-environmental consumer intentions were lowest in the social norm condition, though the difference between the social norm and control norm condition was non-significant, *t*(1038) = -1.50, *p* = .134, *d* = 0.15. Overall pro-environmental consumer intentions were also non-significantly lower in the moral norm compared to the control norm condition, *t*(1038) = -1.00, *p* = .320, *d* = 0.10, and non-significantly lower in the descriptive norm compared to the control norm condition, *t*(1038) = -0.29, *p* = .774, *d* = 0.03.

**Table 11**

*Comparison of Pro-environmental Consumer Intentions Between Norm Conditions*

| Contrast of Norm Conditions | *EMM Difference* | *95%CI*  *EMM Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Descriptive vs Control | -0.03 | [-0.22, 0.17] | 0.10 | 1038 | -0.29 | 0.774 | 0.03 |
| Convention vs Control | 0.07 | [-0.13, 0.27] | 0.10 | 1038 | 0.68 | 0.499 | 0.07 |
| Social vs Control | -0.16 | [-0.36, 0.05] | 0.10 | 1038 | -1.50 | 0.134 | 0.15 |
| Moral vs Control | -0.10 | [-0.31, 0.10] | 0.10 | 1038 | -1.00 | 0.320 | 0.10 |

***Framing by norm interaction effect.***

The framing by norm interaction effect was not significant in the overall model, *F*(8, 55071.52) = 0.61, *p* = .767, ηp2 = .005. However, because there was an a priori hypothesis regarding this two-way interaction, simple effects analyses were performed to better understand the nature (or the reason for the lack of) this interaction effect. Table # displays the EMMs for each combination of framing and norm condition. These EMMs are also visually depicted in Figure #.

**Table #**

*Estimated Marginal Means for Pro-environmental Consumer Intentions Across Norm and Framing Conditions*

|  | Framing Condition | | |  |
| --- | --- | --- | --- | --- |
|  | Control | Pro-environmental | Self-enhancing | Per Norm Condition |
| Norm Condition | *EMM* (*SE*) | *EMM* (*SE*) | *EMM* (*SE*) | *EMM* (*SE*) |
| Control | 4.45 (0.12) | 4.61 (0.13) | 4.24 (0.13) | 4.43 (0.07) |
| Descriptive Norm | 4.29 (0.13) | 4.44 (0.13) | 4.47 (0.12) | 4.40 (0.07) |
| Convention | 4.50 (0.14) | 4.54 (0.12) | 4.47 (0.13) | 4.50 (0.07) |
| Social Norm | 4.16 (0.12) | 4.42 (0.13) | 4.24 (0.14) | 4.28 (0.08) |
| Moral Norm | 4.23 (0.14) | 4.38 (0.12) | 4.38 (0.13) | 4.33 (0.08) |
| Per Framing Condition | 4.33 (0.06) | 4.48 (0.06) | 4.36 (0.06) |  |

*Note.* Estimated marginal means from the regression model detailed in Table 1 (DV = Consumer Intentions). Standard errors provided in parentheses next to each estimated marginal mean.

**Figure #**

*Visualization of the EMMs for Pro-environmental Consumer Intentions Across Each Framing by Norm Condition*

A graph with lines and different colored lines

Description automatically generated

To better understand the framing by norm interaction effect, the effect of each norm-intervention condition was examined separately for each framing condition. The results are shown in Table #. When no framing context was provided (the control framing condition), the same pattern of effects for each norm-intervention condition as was observed when examining the overall effects of each norm-intervention condition was found. Specifically, when a control framing was used, pro-environmental consumer intentions were highest in the convention condition, though the difference between the convention and control norm condition was not significant, *t*(1038) = 0.27, *p* = .783, *d* = 0.05. Pro-environmental consumer intentions were also lowest in the social norm condition, though the difference between the social norm and control norm condition was not significant, *t*(1038) = -1.71, *p* = .088, *d* = 0.27. Pro-environmental consumer intentions were also lower in the moral norm compared to the control norm condition, *t*(1038) = -1.16, *p* = .246, *d* = 0.21, and in the descriptive norm compared to the control norm condition, *t*(1038) = -0.87, *p* = .384, *d* = 0.15, but neither difference was significant.

When a pro-environmental framing context was used, pro-environmental consumer intentions were lowest when a moral norm was used, though the difference between the moral norm and control norm conditions was not significant, *t*(1038) = -1.33, *p* = .183, *d* = 0.22. None of the norm-intervention conditions had an EMM higher than the EMM for the control norm condition within the pro-environmental framing condition.

When a self-enhancing framing context was used, pro-environmental consumer intentions were highest when a descriptive norm or convention message was used, though the comparisons between the descriptive norm and control norm conditions, *t*(1038) = 1.36, *p* = .174, *d* = 0.22, and between the convention and control norm conditions, *t*(1038) = 1.29, *p* = .198, *d* = 0.22, were both non-significant. However, a small effect was observed for both of these improvements. Pro-environmental consumer intentions were also non-significantly improved compared to the control norm condition when a moral norm was used, *t*(1038) = 0.78,  *p* = .435, *d* = 0.13, and were effectively the same as the control condition when a social norm was used, *t*(1038) = 0.05, *p* = .435, *d* = 0.01.

**Table #**

*Effect of Each Norm Condition on Pro-environmental Consumer Intentions Across Framing Conditions*

| Framing Condition | Contrast of Norm Conditions | *EMM Difference* | *95%CI  EMM Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Control | Descriptive vs Control | -0.16 | [-0.51, 0.20] | 0.18 | 1038 | -0.87 | 0.384 | 0.15 |
| Convention vs Control | 0.05 | [-0.31, 0.41] | 0.18 | 1038 | 0.27 | 0.783 | 0.05 |
| Social vs Control | -0.29 | [-0.62, 0.04] | 0.17 | 1038 | -1.71 | 0.088 | 0.27 |
| Moral vs Control | -0.22 | [-0.59, 0.15] | 0.19 | 1038 | -1.16 | 0.246 | 0.21 |
| PE | Descriptive vs Control | -0.17 | [-0.52, 0.19] | 0.18 | 1038 | -0.94 | 0.349 | 0.16 |
| Convention vs Control | -0.07 | [-0.42, 0.27] | 0.17 | 1038 | -0.42 | 0.671 | 0.07 |
| Social vs Control | -0.19 | [-0.55, 0.18] | 0.19 | 1038 | -1.02 | 0.310 | 0.18 |
| Moral vs Control | -0.23 | [-0.58, 0.11] | 0.18 | 1038 | -1.33 | 0.183 | 0.22 |
| SE | Descriptive vs Control | 0.24 | [-0.11, 0.58] | 0.18 | 1038 | 1.36 | 0.174 | 0.22 |
| Convention vs Control | 0.23 | [-0.12, 0.59] | 0.18 | 1038 | 1.29 | 0.198 | 0.22 |
| Social vs Control | 0.01 | [-0.36, 0.38] | 0.19 | 1038 | 0.05 | 0.962 | 0.01 |
| Moral vs Control | 0.14 | [-0.21, 0.49] | 0.18 | 1038 | 0.78 | 0.435 | 0.13 |

*Note.* PE = Pro-environmental framing, SE = self-enhancing framing

Although the self-enhancing framing context was the only one in which pro-environmental consumer intentions showed improvements across all norm-intervention conditions compared to the control norm condition, this is contributed to by the fact that the EMM for the control norm condition paired with the self-enhancing framing context was lower than the EMM for the control norm condition paired with the other two framing contexts. To better understand the combined effects of each norm condition with each framing condition, this finding was followed up by simple effects analyses comparing the EMMs for the same norm-intervention condition across framing contexts. The results are shown in Table #.

When a convention was used, pro-environmental consumer intentions were approximately equally high across all framing conditions. Additionally, as shown in Figure #, there appeared to be less variability in pro-environmental consumer intentions across framing contexts when a convention message as used compared to when no normative message was used.

Pro-environmental consumer intentions also appeared to be higher when a descriptive norm or a moral norm was paired with the pro-environmental or self-enhancing framing than with the control framing, though the differences between these conditions were not significant. When a social norm was used, pro-environmental consumer intentions also appeared to be highest when the pro-environmental framing was used, though the differences between the pre-environmental, self-enhancing, and control framings were all non-significant.

**Table #**

*Differences in Estimated Marginal Means for Each Norm-Intervention Condition Across Framing Conditions*

| Norm Condition | Contrast of  Framing Conditions | *EMM Difference* | *95% EMM Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Control norm | PE vs Control | 0.16 | [-0.19, 0.51] | 0.18 | 1038 | 0.91 | 0.364 | 0.15 |
| SE vs Control | -0.21 | [-0.56, 0.13] | 0.18 | 1038 | -1.21 | 0.227 | 0.20 |
| PE vs SE | 0.38 | [0.02, 0.73] | 0.18 | 1038 | 2.08 | 0.037 | 0.35 |
| Descriptive Norm | PE vs Control | 0.15 | [-0.21, 0.51] | 0.18 | 1038 | 0.81 | 0.418 | 0.14 |
| SE vs Control | 0.18 | [-0.17, 0.53] | 0.18 | 1038 | 1.02 | 0.310 | 0.17 |
| PE vs SE | -0.03 | [-0.38, 0.31] | 0.18 | 1038 | -0.18 | 0.854 | 0.03 |
| Convention | PE vs Control | 0.04 | [-0.32, 0.39] | 0.18 | 1038 | 0.20 | 0.838 | 0.03 |
| SE vs Control | -0.03 | [-0.40, 0.34] | 0.19 | 1038 | -0.16 | 0.872 | 0.03 |
| PE vs SE | 0.07 | [-0.28, 0.41] | 0.18 | 1038 | 0.38 | 0.701 | 0.06 |
| Social Norm | PE vs Control | 0.26 | [-0.08, 0.61] | 0.18 | 1038 | 1.48 | 0.138 | 0.25 |
| SE vs Control | 0.08 | [-0.27, 0.44] | 0.18 | 1038 | 0.47 | 0.637 | 0.08 |
| PE vs SE | 0.18 | [-0.20, 0.55] | 0.19 | 1038 | 0.93 | 0.351 | 0.17 |
| Moral Norm | PE vs Control | 0.15 | [-0.22, 0.51] | 0.19 | 1038 | 0.78 | 0.433 | 0.14 |
| SE vs Control | 0.15 | [-0.23, 0.52] | 0.19 | 1038 | 0.76 | 0.447 | 0.14 |
| PE vs SE | 0.00 | [-0.35, 0.35] | 0.18 | 1038 | 0.00 | 0.999 | 0.00 |

*Note*. PE = pro-environmental, SE = self-enhancing

***Values interaction effects.***

**Biospheric values.** In the overall model, biospheric values significantly predicted pro-environmental consumer behaviors, *F*(1, 182541.21) = 60.76, *p* < .001, ηp2 = .056. On average, participants high (+1SD above the mean) on biospheric values scored significantly higher on pro-environmental consumer intentions (*EMM* = 4.75, *SE* = 0.06) compared to participants low (-1SD below the mean) on biospheric values (*EMM* = 4.03, *SE* = 0.06), *t*(1038) = 7.79, *p* < .001, *d* = 0.67.

Additionally, there was a significant two-way interaction between biospheric values and norm condition, *F*(4, 97395.31) = 2.56, *p* = .037, ηp2 = .010. The two-way interaction between biospheric values and framing condition was not significant, *F*(2, 3277.29) = 0.27, *p* = .761, ηp2 = .001, nor was the three-way interaction between biospheric values, framing condition, and norm condition, *F*(8, 345248.97) = 1.89, *p* = .057, ηp2 = .014. Simple effects analyses were performed to examine the nature of these interaction effects further. EMMs for these contrasts are shown in Table #.

**Table #**

*Estimated Marginal Means for Pro-environmental Consumer Intentions at Low and High Biospheric Values across Framing and Norm Conditions*

|  | Framing Condition | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Control | | Pro-environmental | | Self-enhancing | | Per  Norm Condition | |
| Norm Condition | Low | High | Low | High | Low | High | Low | High |
| Control | 3.89 (0.20) | 5.01 (0.20) | 4.34 (0.19) | 4.88 (0.21) | 3.74 (0.22) | 4.73 (0.23) | 3.99 (0.12) | 4.87 (0.12) |
| Descriptive Norm | 3.83 (0.23) | 4.75 (0.24) | 4.27 (0.20) | 4.62 (0.21) | 4.20 (0.23) | 4.75 (0.21) | 4.10 (0.13) | 4.71 (0.13) |
| Convention | 3.68 (0.22) | 5.32 (0.24) | 3.86 (0.21) | 5.21 (0.20) | 4.15 (0.22) | 4.79 (0.23) | 3.90 (0.12) | 5.11 (0.13) |
| Social Norm | 4.12 (0.20) | 4.20 (0.20) | 4.07 (0.18) | 4.77 (0.21) | 3.87 (0.24) | 4.62 (0.26) | 4.02 (0.12) | 4.53 (0.13) |
| Moral Norm | 4.31 (0.32) | 4.15 (0.23) | 3.85 (0.19) | 4.91 (0.91) | 4.26 (0.26) | 4.49 (0.21) | 4.14 (0.15) | 4.52 (0.12) |
| Per Framing Condition | 3.96 (0.11) | 4.69 (0.10) | 4.08 (0.09) | 4.88 (0.09) | 4.05 (0.10) | 4.67 (0.10) |  |  |

*Note.* This table reports EMMs for pro-environmental consumer intentions at low (-1SD) biospheric values and high (+1SD) biospheric values across framing and norm conditions. Standard errors are reported in parentheses.

Across all framing conditions, participants high on biospheric values scored significantly higher on pro-environmental consumer intentions compared to participants low on biospheric values, all *p*s < .001 (see Table #). Similarly, participants high on biospheric values scored significantly higher on pro-environmental consumer intentions compared to participants low on biospheric values in the control norm, descriptive norm, convention, and social norm conditions, all *p*s < .012 (see Table #). The only norm condition in which there was no significant difference in pro-environmental consumer intentions between people high and low on biospheric values was the moral norm condition, *p* = .099.

**Table #**

*Comparison of Pro-environmental Consumer Intentions Between People Low and High on Biospheric Values across Framing Conditions*

| Contrast | *EMM*  *Difference* | *95% EMM*  *Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| C framing: High Bio - Low Bio | 0.72 | [0.39, 1.06] | 0.17 | 1038 | 4.29 | <.001 | 0.68 |
| PE framing: High Bio - Low Bio | 0.80 | [0.53, 1.07] | 0.14 | 1038 | 5.83 | <.001 | 0.75 |
| SE framing: High Bio - Low Bio | 0.63 | [0.29, 0.97] | 0.17 | 1038 | 3.67 | <.001 | 0.59 |

*Note.* C = control, PE = pro-environmental, SE = self-enhancing

**Table #**

*Comparison of Pro-environmental Consumer Intentions Between People Low and High on Biospheric Values across Norm Conditions*

| Contrast | *EMM*  *Difference* | *95% EMM*  *Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Control norm: High Bio - Low Bio | 0.89 | [0.51, 1.26] | 0.19 | 1038 | 4.58 | <.001 | 0.83 |
| Descriptive: High Bio - Low Bio | 0.61 | [0.21, 1.01] | 0.20 | 1038 | 2.97 | 0.003 | 0.57 |
| Convention: High Bio - Low Bio | 1.21 | [0.81, 1.61] | 0.20 | 1038 | 5.95 | <.001 | 1.13 |
| Social norm: High Bio - Low Bio | 0.51 | [0.12, 0.90] | 0.20 | 1038 | 2.55 | 0.011 | 0.48 |
| Moral norm: High Bio - Low Bio | 0.38 | [-0.07, 0.83] | 0.23 | 1038 | 1.65 | 0.099 | 0.35 |

Simple effects analyses were performed to examine the three-way interaction effect between biospheric values, framing condition, and norm condition. This three-way interaction is visually illustrated in Figure # below. Table # examines the effect of each norm-intervention condition across each framing condition separately for participants low and high on biospheric values.

When the pro-environmental framing or control framing was used, for participants high on biospheric values, exposure to the convention message non-significantly improved pro-environmental consumer intentions, *t*(1038) = 1.16, *p* = .248, *d* = 0.31 and *t*(1038) = 0.99, *p* = .321, *d* = 0.29. For participants low on biospheric values, exposure to the convention message in the pro-environmental and control framing conditions non-significantly decreased pro-environmental consumer intentions, *t*(1038) = -1.72, *p* = .087, *d* = 0.45 and *t*(1038) = -0.71, *p* = .475, *d* = 0.20. Interestingly, when no framing context was given, exposure to the social norm and moral norm conditions significantly decreased pro-environmental consumer intentions among participants high on biospheric values, *t*(1038) = -2.86, *p* = .004, *d* = 0.76 and *t*(1038) = -2.83, *p* = .005, *d* = 0.81, and non-significantly improved pro-environmental consumer intentions among participants high on biospheric values, *t*(1038) = 0.83, *p* = .407, *d* = 0.40 and *t*(1038) = 1.13, *p* = .258, *d* = 0.40. The effect of the descriptive norm condition was similar for people high and low on biospheric values across the control and pro-environmental framing conditions.

When a self-enhancing framing was used, the main differences in the effects of each norm-intervention condition appeared to be that exposure to the descriptive norm non-significantly improved pro-environmental consumer intentions for people low on biospheric values, *t*(1038) = 1.44, *p* = .150, *d* = 0.43, but had little effect on people high on biospheric values, *t*(1038) = 0.05, *p* = .958, *d* = 0.02. Again, exposure to the social norm and moral norm conditions had opposite effects on people low and high on biospheric values. For people low on biospheric values, exposure to the social and moral norm conditions non-significantly increased pro-environmental consumer intentions among participants, *t*(1038) = -0.41, *p* = .680, *d* = 0.12 and *t*(1038) = 1.53, *p* = .125, *d* = 0.49, whereas they non-significantly decreased pro-environmental consumer intentions among participants high on biospheric values, *t*(1038) = -0.33, *p* = .739, *d* = 0.11 and *t*(1038) = -0.77, *p* = .439, *d* = 0.23.

**Figure #**

*Visualization of the EMMs at Low and High Biospheric Values Across Framing and Norm Conditions*

A diagram of different shapes

Description automatically generated

**Table #**

*Effect of Each Norm Condition at Low and High Biospheric Values Across Framing Conditions*

| Framing Condition | Level of Values | Contrast of Norm Conditions | *EMM Difference* | *95%CI  EMM Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Control | -1SD Biospheric | Descriptive vs Control | -0.06 | [-0.66, 0.54] | 0.31 | 1038 | -0.19 | 0.853 | 0.05 |
| Convention vs Control | -0.21 | [-0.79, 0.37] | 0.29 | 1038 | -0.71 | 0.475 | 0.20 |
| Social vs Control | 0.23 | [-0.32, 0.78] | 0.28 | 1038 | 0.83 | 0.407 | 0.22 |
| Moral vs Control | 0.42 | [-0.31, 1.16] | 0.37 | 1038 | 1.13 | 0.258 | 0.40 |
| +1SD Biospheric | Descriptive vs Control | -0.26 | [-0.87, 0.35] | 0.31 | 1038 | -0.84 | 0.403 | 0.24 |
| Convention vs Control | 0.31 | [-0.30, 0.93] | 0.31 | 1038 | 0.99 | 0.321 | 0.29 |
| Social vs Control | -0.81 | [-1.37, -0.25] | 0.28 | 1038 | -2.86 | 0.004 | 0.76 |
| Moral vs Control | -0.86 | [-1.46, -0.26] | 0.30 | 1038 | -2.83 | 0.005 | 0.81 |
| PE | -1SD Biospheric | Descriptive vs Control | -0.08 | [-0.62, 0.47] | 0.28 | 1038 | -0.27 | 0.785 | -0.07 |
| Convention vs Control | -0.48 | [-1.04, 0.07] | 0.28 | 1038 | -1.72 | 0.087 | -0.45 |
| Social vs Control | -0.27 | [-0.78, 0.24] | 0.26 | 1038 | -1.04 | 0.299 | -0.25 |
| Moral vs Control | -0.50 | [-1.03, 0.04] | 0.27 | 1038 | -1.83 | 0.067 | -0.47 |
| +1SD Biospheric | Descriptive vs Control | -0.26 | [-0.85, 0.32] | 0.30 | 1038 | -0.89 | 0.375 | -0.25 |
| Convention vs Control | 0.34 | [-0.23, 0.90] | 0.29 | 1038 | 1.16 | 0.248 | 0.31 |
| Social vs Control | -0.10 | [-0.69, 0.49] | 0.30 | 1038 | -0.35 | 0.730 | -0.10 |
| Moral vs Control | 0.03 | [-0.53, 0.59] | 0.28 | 1038 | 0.10 | 0.917 | 0.03 |
| SE | -1SD Biospheric | Descriptive vs Control | 0.46 | [-0.17, 1.09] | 0.32 | 1038 | 1.44 | 0.150 | 0.43 |
| Convention vs Control | 0.41 | [-0.20, 1.02] | 0.31 | 1038 | 1.33 | 0.183 | 0.39 |
| Social vs Control | 0.13 | [-0.50, 0.77] | 0.32 | 1038 | 0.41 | 0.680 | 0.12 |
| Moral vs Control | 0.52 | [-0.15, 1.19] | 0.34 | 1038 | 1.53 | 0.125 | 0.49 |
| +1SD Biospheric | Descriptive vs Control | 0.02 | [-0.60, 0.63] | 0.31 | 1038 | 0.05 | 0.958 | 0.02 |
| Convention vs Control | 0.05 | [-0.58, 0.68] | 0.32 | 1038 | 0.17 | 0.869 | 0.05 |
| Social vs Control | -0.12 | [-0.80, 0.57] | 0.35 | 1038 | -0.33 | 0.739 | 0.11 |
| Moral vs Control | -0.24 | [-0.86, 0.37] | 0.31 | 1038 | -0.77 | 0.439 | 0.23 |

**Altruistic values.** In the overall model, altruistic values did not significantly predict pro-environmental consumer behaviors, *F*(1, 4948.63) = 1.48, *p* = .224, ηp2 = .002. On average, participants high (+1SD above the mean) on altruistic values scored non-significantly higher on pro-environmental consumer intentions (*EMM* = 4.47, *SE* = 0.07) compared to participants low (-1SD below the mean) on altruistic values (*EMM* = 4.31, *SE* = 0.07), *t*(1038) = 1.23, *p* = .220, *d* = 0.15.

The two-way interaction effects between altruistic values and framing condition, *F*(2, 6519.70) = 0.52, *p* = .592, ηp2 = .001, and between altruistic values and norm condition, *F*(4, 9084.58) = 1.96, *p* = .098, ηp2 = .008, were both non-significant. The three-way interaction between altruistic values, framing, and norm condition was also non-significant, *F*(8, 345248.97) = 1.89, *p* = .259, ηp2 = .010. Simple effects analyses were performed to examine the nature of these interaction effects further. EMMs for these contrasts are shown in Table #.

**Table #**

*Estimated Marginal Means for Pro-environmental Consumer Intentions at Low and High Altruistic Values across Framing and Norm Conditions*

|  | Framing Condition | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Control | | Pro-environmental | | Self-enhancing | | Per  Norm Condition | |
| Norm Condition | Low | High | Low | High | Low | High | Low | High |
| Control | 4.31 (0.21) | 4.59 (0.19) | 4.62 (0.24) | 4.61 (0.23) | 4.07 (0.31) | 4.40 (0.30) | 4.33 (0.14) | 4.53 (0.14) |
| Descriptive Norm | 4.40 (0.22) | 4.19 (0.25) | 4.42 (0.24) | 4.46 (0.20) | 4.70 (0.20) | 4.25 (0.22) | 4.51 (0.13) | 4.30 (0.13) |
| Convention | 4.82 (0.23) | 4.18 (0.23) | 4.57 (0.21) | 4.51 (0.21) | 4.24 (0.25) | 4.70 (0.22) | 4.54 (0.13) | 4.46 (0.13) |
| Social Norm | 3.83 (0.24) | 4.49 (0.21) | 4.47 (0.23) | 4.38 (0.22) | 4.28 (0.29) | 4.21 (0.26) | 4.19 (0.15) | 4.36 (0.13) |
| Moral Norm | 3.82 (0.21) | 4.64 (0.30) | 4.35 (0.19) | 4.40 (0.20) | 3.98 (0.20) | 4.78 (0.23) | 4.05 (0.12) | 4.16 (0.14) |
| Per Framing Condition | 4.24 (0.10) | 4.42 (0.11) | 4.49 (0.10) | 4.47 (0.10) | 4.25 (0.11) | 4.47 (0.11) |  |  |

*Note.* This table reports EMMs for pro-environmental consumer intentions at low (-1SD) altruistic values and high (+1SD) altruistic values across framing and norm conditions. Standard errors are reported in parentheses.

Across all framing conditions, participants high on biospheric values scored significantly higher on pro-environmental consumer intentions compared to participants low on biospheric values, all *p*s < .001 (see Table #). Similarly, participants high on biospheric values scored significantly higher on pro-environmental consumer intentions compared to participants low on biospheric values in the control norm, descriptive norm, convention, and social norm conditions, all *p*s < .012 (see Table #). The only norm condition in which there was no significant difference in pro-environmental consumer intentions between people high and low on biospheric values was the moral norm condition, *p* = .099.

**Table #**

*Comparison of Pro-environmental Consumer Intentions Between People Low and High on Altruistic Values across Framing Conditions*

| Contrast | *EMM*  *Difference* | *95% EMM*  *Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| C framing: High Alt - Low Alt | 0.18 | [-0.15, 0.51] | 0.17 | 1038 | 1.07 | 0.284 | 0.17 |
| PE framing: High Alt - Low Alt | -0.01 | [-0.33, 0.30] | 0.16 | 1038 | -0.09 | 0.928 | 0.01 |
| SE framing: High Alt - Low Alt | 0.21 | [-0.17, 0.59] | 0.19 | 1038 | 1.10 | 0.272 | 0.20 |

*Note.* C = control, PE = pro-environmental, SE = self-enhancing

**Table #**

*Comparison of Pro-environmental Consumer Intentions Between People Low and High on Altruistic Values across Norm Conditions*

| Contrast | *EMM*  *Difference* | *95% EMM*  *Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Control norm: High Alt - Low Alt | 0.20 | [-0.30, 0.69] | 0.25 | 1038 | 0.79 | 0.428 | 0.19 |
| Descriptive: High Alt - Low Alt | -0.21 | [-0.62, 0.21] | 0.21 | 1038 | -0.98 | 0.325 | 0.20 |
| Convention: High Alt - Low Alt | -0.08 | [-0.50, 0.34] | 0.21 | 1038 | -0.38 | 0.705 | 0.08 |
| Social norm: High Alt - Low Alt | 0.17 | [-0.30, 0.63] | 0.24 | 1038 | 0.70 | 0.485 | 0.16 |
| Moral norm: High Alt - Low Alt | 0.56 | [0.15, 0.96] | 0.21 | 1038 | 2.67 | 0.008 | 0.52 |

Simple effects analyses were performed to examine the three-way interaction effect between biospheric values, framing condition, and norm condition. This three-way interaction is visually illustrated in Figure # below. Table # examines the effect of each norm-intervention condition across each framing condition separately for participants low and high on biospheric values.

When the pro-environmental framing or control framing was used, for participants high on biospheric values, exposure to the convention message non-significantly improved pro-environmental consumer intentions, *t*(1038) = 1.16, *p* = .248, *d* = 0.31 and *t*(1038) = 0.99, *p* = .321, *d* = 0.29. For participants low on biospheric values, exposure to the convention message in the pro-environmental and control framing conditions non-significantly decreased pro-environmental consumer intentions, *t*(1038) = -1.72, *p* = .087, *d* = 0.45 and *t*(1038) = -0.71, *p* = .475, *d* = 0.20. Interestingly, when no framing context was given, exposure to the social norm and moral norm conditions significantly decreased pro-environmental consumer intentions among participants high on biospheric values, *t*(1038) = -2.86, *p* = .004, *d* = 0.76 and *t*(1038) = -2.83, *p* = .005, *d* = 0.81, and non-significantly improved pro-environmental consumer intentions among participants high on biospheric values, *t*(1038) = 0.83, *p* = .407, *d* = 0.40 and *t*(1038) = 1.13, *p* = .258, *d* = 0.40. The effect of the descriptive norm condition was similar for people high and low on biospheric values across the control and pro-environmental framing conditions.

When a self-enhancing framing was used, the main differences in the effects of each norm-intervention condition appeared to be that exposure to the descriptive norm non-significantly improved pro-environmental consumer intentions for people low on biospheric values, *t*(1038) = 1.44, *p* = .150, *d* = 0.43, but had little effect on people high on biospheric values, *t*(1038) = 0.05, *p* = .958, *d* = 0.02. Again, exposure to the social norm and moral norm conditions had opposite effects on people low and high on biospheric values. For people low on biospheric values, exposure to the social and moral norm conditions non-significantly increased pro-environmental consumer intentions among participants, *t*(1038) = -0.41, *p* = .680, *d* = 0.12 and *t*(1038) = 1.53, *p* = .125, *d* = 0.49, whereas they non-significantly decreased pro-environmental consumer intentions among participants high on biospheric values, *t*(1038) = -0.33, *p* = .739, *d* = 0.11 and *t*(1038) = -0.77, *p* = .439, *d* = 0.23.

**Figure #**

*Visualization of the EMMs at Low and High Altruistic Values Across Framing and Norm Conditions*

A graph of a graph

Description automatically generated

**Table #**

*Effect of Each Norm Condition at Low and High Altruistic Values Across Framing Conditions*

| Framing Condition | Level of Values | Contrast of Norm Conditions | *EMM Difference* | *95%CI  EMM Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Control | -1SD Altruistic | Descriptive vs Control | 0.09 | [-0.51, 0.68] | 0.30 | 1038 | 0.29 | 0.772 | 0.08 |
| Convention vs Control | 0.51 | [-0.09, 1.12] | 0.31 | 1038 | 1.66 | 0.097 | 0.48 |
| Social vs Control | -0.48 | [-1.09, 0.14] | 0.31 | 1038 | -1.53 | 0.127 | 0.45 |
| Moral vs Control | -0.48 | [-1.06, 0.09] | 0.29 | 1038 | -1.64 | 0.101 | 0.45 |
| +1SD Altruistic | Descriptive vs Control | -0.40 | [-1.02, 0.21] | 0.31 | 1038 | -1.29 | 0.199 | 0.38 |
| Convention vs Control | -0.41 | [-1.00, 0.18] | 0.30 | 1038 | -1.36 | 0.173 | 0.38 |
| Social vs Control | -0.10 | [-0.66, 0.45] | 0.28 | 1038 | -0.36 | 0.719 | 0.10 |
| Moral vs Control | 0.04 | [-0.65, 0.74] | 0.35 | 1038 | 0.12 | 0.902 | 0.04 |
| PE | -1SD Altruistic | Descriptive vs Control | -0.19 | [-0.86, 0.48] | 0.34 | 1038 | -0.57 | 0.570 | 0.18 |
| Convention vs Control | -0.05 | [-0.67, 0.57] | 0.32 | 1038 | -0.16 | 0.877 | 0.05 |
| Social vs Control | -0.15 | [-0.80, 0.51] | 0.33 | 1038 | -0.44 | 0.663 | 0.14 |
| Moral vs Control | -0.27 | [-0.87, 0.33] | 0.31 | 1038 | -0.87 | 0.385 | 0.25 |
| +1SD Altruistic | Descriptive vs Control | -0.14 | [-0.74, 0.45] | 0.30 | 1038 | -0.48 | 0.634 | 0.14 |
| Convention vs Control | -0.10 | [-0.70, 0.50] | 0.31 | 1038 | -0.32 | 0.748 | 0.09 |
| Social vs Control | -0.23 | [-0.86, 0.40] | 0.32 | 1038 | -0.72 | 0.471 | 0.22 |
| Moral vs Control | -0.20 | [-0.79, 0.39] | 0.30 | 1038 | -0.67 | 0.502 | 0.19 |
| SE | -1SD Altruistic | Descriptive vs Control | 0.63 | [-0.10, 1.36] | 0.37 | 1038 | 1.69 | 0.091 | 0.59 |
| Convention vs Control | 0.17 | [-0.60, 0.94] | 0.39 | 1038 | 0.43 | 0.669 | 0.16 |
| Social vs Control | 0.20 | [-0.62, 1.03] | 0.42 | 1038 | 0.49 | 0.628 | 0.19 |
| Moral vs Control | -0.10 | [-0.81, 0.62] | 0.37 | 1038 | -0.27 | 0.789 | 0.09 |
| +1SD Altruistic | Descriptive vs Control | -0.15 | [-0.88, 0.57] | 0.37 | 1038 | -0.42 | 0.677 | 0.14 |
| Convention vs Control | 0.30 | [-0.44, 1.03] | 0.37 | 1038 | 0.80 | 0.424 | 0.28 |
| Social vs Control | -0.19 | [-0.97, 0.59] | 0.40 | 1038 | -0.47 | 0.639 | 0.17 |
| Moral vs Control | 0.38 | [-0.34, 1.10] | 0.37 | 1038 | 1.04 | 0.301 | 0.36 |

*Note.* PE = pro-environmental, SE = self-enhancing

**Egoistic values.**

**Table #**

*Estimated Marginal Means for Pro-environmental Consumer Intentions at Low and High Egoistic Values across Framing and Norm Conditions*

|  | Framing Condition | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Control | | Pro-environmental | | Self-enhancing | | Per  Norm Condition | |
| Norm Condition | Low | High | Low | High | Low | High | Low | High |
| Control | 4.67 (0.17) | 4.23 (0.20) | 5.08 (0.18) | 4.14 (0.19) | 4.54 (0.21) | 3.93 (0.20) | 4.76 (0.11) | 4.10 (0.11) |
| Descriptive Norm | 4.54 (0.22) | 4.04 (0.20) | 4.67 (0.21) | 4.22 (0.18) | 4.72 (0.22) | 4.23 (0.23) | 4.64 (0.12) | 4.16 (0.12) |
| Convention | 4.91 (0.18) | 4.09 (0.20) | 4.63 (0.18) | 4.44 (0.19) | 4.96 (0.18) | 3.98 (0.18) | 4.83 (0.10) | 4.17 (0.11) |
| Social Norm | 4.57 (0.17) | 3.75 (0.18) | 4.56 (0.19) | 4.28 (0.20) | 4.41 (0.21) | 4.08 (0.19) | 4.52 (0.11) | 4.04 (0.11) |
| Moral Norm | 4.29 (0.24) | 4.17 (0.21) | 4.66 (0.19) | 4.09 (0.18) | 4.68 (0.18) | 4.07 (0.19) | 4.54 (0.12) | 4.11 (0.11) |
| Per Framing Condition | 4.60 (0.09) | 4.06 (0.09) | 4.72 (0.09) | 4.23 (0.08) | 4.66 (0.09) | 4.06 (0.09) |  |  |

*Note.* This table reports EMMs for pro-environmental consumer intentions at low (-1SD) egoistic values and high (+1SD) egoistic values across framing and norm conditions. Standard errors are reported in parentheses.

**Table #**

*Comparison of Pro-environmental Consumer Intentions Between People Low and High on Egoistic Values across Framing Conditions*

| Contrast | *EMM*  *Difference* | *95% EMM*  *Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| C framing: High Ego - Low Ego | -0.54 | [-0.81, -0.28] | 0.13 | 1038 | -4.03 | <.001 | 0.51 |
| PE framing: High Ego - Low Ego | -0.49 | [-0.74, -0.24] | 0.13 | 1038 | -3.84 | <.001 | 0.46 |
| SE framing: High Ego - Low Ego | -0.60 | [-0.87, -0.34] | 0.14 | 1038 | -4.43 | <.001 | 0.56 |

*Note.* C = control, PE = pro-environmental, SE = self-enhancing

**Table #**

*Comparison of Pro-environmental Consumer Intentions Between People Low and High on Egoistic Values across Norm Conditions*

| Contrast | *EMM*  *Difference* | *95% EMM*  *Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Control norm: High Ego - Low Ego | -0.67 | [-0.99, -0.34] | 0.16 | 1038 | -4.04 | <.001 | 0.62 |
| Descriptive: High Ego - Low Ego | -0.48 | [-0.86, -0.10] | 0.19 | 1038 | -2.49 | 0.013 | 0.45 |
| Convention: High Ego - Low Ego | -0.66 | [-0.97, -0.36] | 0.16 | 1038 | -4.23 | <.001 | 0.62 |
| Social norm: High Ego - Low Ego | -0.48 | [-0.80, -0.15] | 0.17 | 1038 | -2.90 | 0.004 | 0.45 |
| Moral norm: High Ego - Low Ego | -0.43 | [-0.77, -0.09] | 0.17 | 1038 | -2.49 | 0.013 | 0.40 |

**Figure #**

*Visualization of the EMMs at Low and High Egoistic Values Across Framing and Norm Conditions*

A diagram of a graph

Description automatically generated

**Table #**

*Effect of Each Norm Condition at Low and High Egoistic Values Across Framing Conditions*

| Framing Condition | Level of Values | Contrast of Norm Conditions | *EMM Difference* | *95%CI  EMM Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Control | -1SD Egoistic | Descriptive vs Control | -0.13 | [-0.66, 0.41] | 0.27 | 1038 | -0.47 | 0.640 | 0.12 |
| Convention vs Control | 0.24 | [-0.25, 0.72] | 0.25 | 1038 | 0.96 | 0.336 | 0.22 |
| Social vs Control | -0.10 | [-0.56, 0.36] | 0.24 | 1038 | -0.42 | 0.674 | 0.09 |
| Moral vs Control | -0.38 | [-0.96, 0.19] | 0.29 | 1038 | -1.31 | 0.192 | 0.36 |
| +1SD Egoistic | Descriptive vs Control | -0.19 | [-0.75, 0.37] | 0.28 | 1038 | -0.66 | 0.507 | 0.18 |
| Convention vs Control | -0.13 | [-0.69, 0.42] | 0.28 | 1038 | -0.48 | 0.634 | 0.13 |
| Social vs Control | -0.48 | [-1.01, 0.05] | 0.27 | 1038 | -1.77 | 0.076 | 0.45 |
| Moral vs Control | -0.06 | [-0.62, 0.51] | 0.29 | 1038 | -0.20 | 0.844 | 0.05 |
| PE | -1SD Egoistic | Descriptive vs Control | -0.42 | [-0.96, 0.12] | 0.27 | 1038 | -1.53 | 0.126 | 0.39 |
| Convention vs Control | -0.45 | [-0.95, 0.05] | 0.25 | 1038 | -1.78 | 0.076 | 0.42 |
| Social vs Control | -0.52 | [-1.03, -0.01] | 0.26 | 1038 | -2.00 | 0.045 | 0.49 |
| Moral vs Control | -0.43 | [-0.93, 0.08] | 0.26 | 1038 | -1.66 | 0.097 | 0.40 |
| +1SD Egoistic | Descriptive vs Control | 0.08 | [-0.43, 0.59] | 0.26 | 1038 | 0.31 | 0.757 | 0.07 |
| Convention vs Control | 0.30 | [-0.22, 0.83] | 0.27 | 1038 | 1.13 | 0.259 | 0.28 |
| Social vs Control | 0.15 | [-0.39, 0.68] | 0.27 | 1038 | 0.53 | 0.595 | 0.14 |
| Moral vs Control | -0.04 | [-0.55, 0.46] | 0.26 | 1038 | -0.17 | 0.868 | 0.04 |
| SE | -1SD Egoistic | Descriptive vs Control | 0.18 | [-0.42, 0.78] | 0.31 | 1038 | 0.58 | 0.560 | 0.17 |
| Convention vs Control | 0.42 | [-0.12, 0.96] | 0.28 | 1038 | 1.53 | 0.126 | 0.40 |
| Social vs Control | -0.13 | [-0.72, 0.46] | 0.30 | 1038 | -0.43 | 0.670 | 0.12 |
| Moral vs Control | 0.14 | [-0.40, 0.69] | 0.28 | 1038 | 0.52 | 0.604 | 0.14 |
| +1SD Egoistic | Descriptive vs Control | 0.30 | [-0.30, 0.90] | 0.31 | 1038 | 0.97 | 0.331 | 0.28 |
| Convention vs Control | 0.04 | [-0.48, 0.57] | 0.27 | 1038 | 0.17 | 0.867 | 0.04 |
| Social vs Control | 0.15 | [-0.39, 0.69] | 0.28 | 1038 | 0.53 | 0.597 | 0.14 |
| Moral vs Control | 0.14 | [-0.40, 0.67] | 0.27 | 1038 | 0.50 | 0.617 | 0.13 |

*Note.* PE = pro-environmental, SE = self-enhancing

**Hedonic values.**

**Table #**

*Estimated Marginal Means for Pro-environmental Consumer Intentions at Low and High Hedonic Values across Framing and Norm Conditions*

|  | Framing Condition | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Control | | Pro-environmental | | Self-enhancing | | Per  Norm Condition | |
| Norm Condition | Low | High | Low | High | Low | High | Low | High |
| Control | 4.72 (0.20) | 4.18 (0.18) | 4.49 (0.23) | 4.73 (0.19) | 4.28 (0.26) | 4.19 (0.22) | 4.50 (0.13) | 4.37 (0.11) |
| Descriptive Norm | 4.41 (0.21) | 4.18 (0.22) | 4.53 (0.20) | 4.35 (0.23) | 4.38 (0.23) | 4.57 (0.23) | 4.44 (0.12) | 4.36 (0.13) |
| Convention | 4.38 (0.24) | 4.62 (0.20) | 4.38 (0.21) | 4.70 (0.19) | 4.46 (0.16) | 4.48 (0.21) | 4.40 (0.12) | 4.60 (0.11) |
| Social Norm | 4.20 (0.20) | 4.12 (0.18) | 4.51 (0.20) | 4.34 (0.21) | 4.55 (0.24) | 3.94 (0.24) | 4.42 (0.12) | 4.13 (0.12) |
| Moral Norm | 4.52 (0.23) | 3.94 (0.22) | 4.44 (0.18) | 4.31 (0.20) | 4.68 (0.17) | 4.07 (0.20) | 4.55 (0.11) | 4.11 (0.12) |
| Per Framing Condition | 4.44 (0.10) | 4.21 (0.09) | 4.47 (0.09) | 4.49 (0.09) | 4.47 (0.10) | 4.25 (0.10) |  |  |

*Note.* This table reports EMMs for pro-environmental consumer intentions at low (-1SD) hedonic values and high (+1SD) hedonic values across framing and norm conditions. Standard errors are reported in parentheses.

**Table #**

*Comparison of Pro-environmental Consumer Intentions Between People Low and High on Hedonic Values across Framing Conditions*

| Contrast | *EMM*  *Difference* | *95% EMM*  *Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| C framing: High Hed - Low Hed | -0.23 | [-0.52, 0.05] | 0.14 | 1038 | -1.62 | 0.106 | 0.22 |
| PE framing: High Hed - Low Hed | 0.02 | [-0.27, 0.30] | 0.14 | 1038 | 0.10 | 0.917 | 0.01 |
| SE framing: High Hed - Low Hed | -0.22 | [-0.53, 0.08] | 0.16 | 1038 | -1.42 | 0.156 | 0.21 |

*Note.* C = control, PE = pro-environmental, SE = self-enhancing

**Table #**

*Comparison of Pro-environmental Consumer Intentions Between People Low and High on Hedonic Values across Norm Conditions*

| Contrast | *EMM*  *Difference* | *95% EMM*  *Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Control norm: High Hed - Low Hed | -0.13 | [-0.52, 0.26] | 0.20 | 1038 | -0.66 | 0.512 | 0.12 |
| Descriptive: High Hed - Low Hed | -0.08 | [-0.48, 0.33] | 0.21 | 1038 | -0.37 | 0.715 | 0.07 |
| Convention: High Hed - Low Hed | 0.20 | [-0.16, 0.55] | 0.18 | 1038 | 1.09 | 0.275 | 0.18 |
| Social norm: High Hed - Low Hed | -0.28 | [-0.66, 0.10] | 0.19 | 1038 | -1.46 | 0.145 | 0.26 |
| Moral norm: High Hed - Low Hed | -0.44 | [-0.78, -0.10] | 0.17 | 1038 | -2.52 | 0.012 | 0.41 |

**Figure #**

*Visualization of the EMMs at Low and High Hedonic Values Across Framing and Norm Conditions*

A diagram of a graph

Description automatically generated

**Table #**

*Effect of Each Norm Condition at Low and High Hedonic Values Across Framing Conditions*

| Framing Condition | Level of Values | Contrast of Norm Conditions | *EMM Difference* | *95%CI  EMM Difference* | *SE* | *df* | *t* | *p* | *Cohen’s d* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Control | -1SD Hedonic | Descriptive vs Control | -0.31 | [-0.88, 0.26] | 0.29 | 1038 | -1.07 | 0.286 | 0.29 |
| Convention vs Control | -0.34 | [-0.94, 0.27] | 0.31 | 1038 | -1.09 | 0.277 | 0.32 |
| Social vs Control | -0.52 | [-1.07, 0.03] | 0.28 | 1038 | -1.86 | 0.063 | 0.49 |
| Moral vs Control | -0.20 | [-0.79, 0.40] | 0.30 | 1038 | -0.66 | 0.511 | 0.19 |
| +1SD Hedonic | Descriptive vs Control | 0.00 | [-0.57, 0.56] | 0.29 | 1038 | -0.01 | 0.989 | 0.00 |
| Convention vs Control | 0.44 | [-0.09, 0.96] | 0.27 | 1038 | 1.64 | 0.101 | 0.41 |
| Social vs Control | -0.06 | [-0.56, 0.45] | 0.26 | 1038 | -0.23 | 0.818 | 0.06 |
| Moral vs Control | -0.24 | [-0.79, 0.31] | 0.28 | 1038 | -0.85 | 0.395 | 0.22 |
| PE | -1SD Hedonic | Descriptive vs Control | 0.04 | [-0.56, 0.63] | 0.30 | 1038 | 0.13 | 0.899 | 0.04 |
| Convention vs Control | -0.12 | [-0.73, 0.50] | 0.31 | 1038 | -0.38 | 0.707 | 0.11 |
| Social vs Control | 0.01 | [-0.59, 0.61] | 0.31 | 1038 | 0.04 | 0.966 | 0.01 |
| Moral vs Control | -0.05 | [-0.63, 0.52] | 0.29 | 1038 | -0.18 | 0.857 | 0.05 |
| +1SD Hedonic | Descriptive vs Control | -0.38 | [-0.97, 0.21] | 0.30 | 1038 | -1.25 | 0.210 | 0.35 |
| Convention vs Control | -0.03 | [-0.56, 0.50] | 0.27 | 1038 | -0.11 | 0.910 | 0.03 |
| Social vs Control | -0.39 | [-0.94, 0.16] | 0.28 | 1038 | -1.38 | 0.168 | 0.36 |
| Moral vs Control | -0.42 | [-0.95, 0.12] | 0.27 | 1038 | -1.52 | 0.128 | 0.39 |
| SE | -1SD Hedonic | Descriptive vs Control | 0.10 | [-0.57, 0.77] | 0.34 | 1038 | 0.29 | 0.770 | 0.09 |
| Convention vs Control | 0.17 | [-0.43, 0.77] | 0.31 | 1038 | 0.57 | 0.570 | 0.16 |
| Social vs Control | 0.27 | [-0.42, 0.95] | 0.35 | 1038 | 0.76 | 0.448 | 0.25 |
| Moral vs Control | 0.40 | [-0.19, 0.99] | 0.30 | 1038 | 1.33 | 0.182 | 0.38 |
| +1SD Hedonic | Descriptive vs Control | 0.38 | [-0.24, 0.99] | 0.31 | 1038 | 1.20 | 0.229 | 0.35 |
| Convention vs Control | 0.29 | [-0.29, 0.88] | 0.30 | 1038 | 0.98 | 0.327 | 0.27 |
| Social vs Control | -0.25 | [-0.88, 0.39] | 0.32 | 1038 | -0.77 | 0.443 | 0.23 |
| Moral vs Control | -0.12 | [-0.70, 0.47] | 0.30 | 1038 | -0.40 | 0.688 | 0.11 |

*Note.* PE = pro-environmental, SE = self-enhancing

***Ingroup identification interaction effects.***

***Exploratory analyses.***

**Logistic Regression Analysis for Consumer Behaviors.**

***Main effect of framing condition.***

***Main effect of norm condition.***

***Framing by norm interaction effect.***

***Values interaction effects.***

Biospheric values.

Altruistic values.

Egoistic values.

Hedonic values.

***Ingroup identification interaction effects.***

***Exploratory analyses.***