log\_analysis\_with\_MI\_smcfcs

2023-03-29

Table of Contents

# Data Import & Cleaning

## Import data

raw\_psych\_hum\_subj <- import("data/raw/raw\_psych\_hum\_subj.csv")  
raw\_mktg\_hum\_subj <- import("data/raw/raw\_mktg\_hum\_subj.csv")  
raw\_gen\_uo\_pop <- import("data/raw/raw\_gen\_uo\_pop.csv")  
pre\_fall22 <- import("data/prescreen/dittersdorf\_matches\_f22.csv")  
pre\_winter23 <- import("data/prescreen/dittersdorf\_matches\_w23.csv")  
pre\_spring23 <- import("data/prescreen/dittersdorf\_matches\_s23.csv")  
participant\_list <- import("data/prescreen/dittersdorf\_participants.csv")

Fix age before converting variable types

table(raw\_psych\_hum\_subj$Age) # 18 years old = 18

##   
## 18 18 years old 19 20 21   
## 117 220 1 297 120 76   
## 22 23 24 25 27 28   
## 41 4 3 2 1 1   
## 29 30 31 32 33 50   
## 1 1 1 1 1 1

table(raw\_mktg\_hum\_subj$Age) # 1999 = 24

##   
## 18 19 1999 20 21 22 23 24 25 28 test   
## 11 4 13 1 50 119 66 7 9 3 1 3

table(raw\_gen\_uo\_pop$Age)

##   
## 18 20 21 22 28   
## 2 1 2 1 1

raw\_psych\_hum\_subj$Age[raw\_psych\_hum\_subj$Age == "18 years old"] <- 18  
raw\_mktg\_hum\_subj$Age[raw\_mktg\_hum\_subj$Age == 1999] <- 24  
  
table(raw\_psych\_hum\_subj$Age) # 18 years old = 18

##   
## 18 19 20 21 22 23 24 25 27 28 29 30 31 32 33 50   
## 117 221 297 120 76 41 4 3 2 1 1 1 1 1 1 1 1

table(raw\_mktg\_hum\_subj$Age) # 1999 = 24

##   
## 18 19 20 21 22 23 24 25 28 test   
## 11 4 13 50 119 66 7 10 3 1 3

## Combine dataframes

raw\_psych\_hum\_subj <- raw\_psych\_hum\_subj %>%  
 mutate(Age = as.integer(Age),  
 Gender = as.factor(Gender),  
 framing\_condition\_DO = as.factor(framing\_condition\_DO),  
 norm\_condition\_DO = as.factor(norm\_condition\_DO),  
 consumer\_behaviors = as.factor(consumer\_behaviors),  
 skepticism = as.factor(skepticism),  
 id = as.factor(id),  
 source = strrep("psych\_hsp", times = 1))  
  
levels(raw\_psych\_hum\_subj$framing\_condition\_DO)

## [1] "" "control\_framing" "pro\_env\_framing" "self\_enh\_framing"

raw\_mktg\_hum\_subj <- raw\_mktg\_hum\_subj %>%  
 mutate(Age = as.integer(Age),  
 Gender = as.factor(Gender),  
 Gender\_5\_TEXT = as.character(Gender\_5\_TEXT),  
 Class\_Lvl\_7\_TEXT = as.character(Class\_Lvl\_7\_TEXT),  
 Pol\_Ornt\_8\_TEXT = as.character(Pol\_Ornt\_8\_TEXT),  
 Ethnicity\_8\_TEXT = as.character(Ethnicity\_8\_TEXT),  
 skept\_open = as.character(skept\_open),  
 skepticism = as.factor(skepticism),  
 id = as.factor(id),  
 framing\_condition\_DO = as.factor(framing\_condition\_DO),  
 norm\_condition\_DO = as.factor(norm\_condition\_DO),  
 consumer\_behaviors = as.factor(consumer\_behaviors),  
 source = strrep("mktg\_hsp", times = 1))  
  
raw\_gen\_uo\_pop <- raw\_gen\_uo\_pop %>%  
 mutate(Gender = as.factor(Gender),  
 Gender\_5\_TEXT = as.character(Gender\_5\_TEXT),  
 Class\_Lvl\_7\_TEXT = as.character(Class\_Lvl\_7\_TEXT),  
 Pol\_Ornt\_8\_TEXT = as.character(Pol\_Ornt\_8\_TEXT),  
 skept\_open = as.character(skept\_open),  
 skepticism = as.factor(skepticism),  
 id = as.factor(id),  
 framing\_condition\_DO = as.factor(framing\_condition\_DO),  
 norm\_condition\_DO = as.factor(norm\_condition\_DO),  
 consumer\_behaviors = as.factor(consumer\_behaviors),  
 source = strrep("gen\_UO", times = 1))

Specify unique variables to combine prescreen data sets

# Create unique full\_name variable  
pre\_fall22$full\_name <- paste(pre\_fall22$first\_name, pre\_fall22$last\_name, sep="\_")  
  
pre\_winter23$full\_name <- paste(pre\_winter23$first\_name, pre\_winter23$last\_name, sep="\_")  
  
pre\_spring23$full\_name <- paste(pre\_spring23$first\_name, pre\_spring23$last\_name, sep="\_")  
  
participant\_list$full\_name <- paste(participant\_list$first\_name, participant\_list$last\_name, sep="\_")  
  
# Create column indicating which data set rows came from  
  
pre\_fall22 <- pre\_fall22 %>%  
 mutate(term = "fall22")  
  
pre\_winter23 <- pre\_winter23 %>%  
 mutate(term = "winter23")  
  
pre\_spring23 <- pre\_spring23 %>%  
 mutate(term = "spring23")

Combine prescreen data

combine1 <- smartbind(pre\_fall22, pre\_winter23)  
combined\_prescreen <- smartbind(combine1, pre\_spring23)  
  
# nrow(pre\_fall22) + nrow(pre\_winter23) + nrow(pre\_spring23) # n = 1167  
  
combined\_prescreen\_unique <- combined\_prescreen[!duplicated(combined\_prescreen$full\_name), ] # keeps first row (fall22)

Subset key variables

combined\_prescreen\_key <- combined\_prescreen\_unique %>%  
 dplyr::select(full\_name, term, respecting:gratification, honest:gossip)  
  
participant\_list\_key <- participant\_list %>%  
 dplyr::select(full\_name, survey\_id)

Merge with participant list

merged\_prescreen <- merge(combined\_prescreen\_key, participant\_list\_key, by = "full\_name")

Rename SDR items to match

Convert variable types

merged\_prescreen <- merged\_prescreen %>%  
 mutate(respecting = as.integer(respecting),  
 unity = as.integer(unity),  
 protecting = as.integer(protecting),  
 preventing = as.integer(preventing),  
 equality = as.integer(equality),  
 peace = as.integer(peace),  
 justice = as.integer(justice),  
 helpful = as.integer(helpful),  
 power = as.integer(power),  
 wealth = as.integer(wealth),  
 authority = as.integer(authority),  
 influential = as.integer(influential),  
 ambition = as.integer(ambition),  
 pleasures = as.integer(pleasures),  
 enjoying = as.integer(enjoying),  
 gratification = as.integer(gratification),  
 honest = as.integer(honest),  
 like = as.integer(like),  
 disturbing = as.integer(disturbing),  
 regret = as.integer(regret),  
 lose\_out = as.integer(lose\_out),  
 rational = as.integer(rational),  
 confident = as.integer(confident),  
 lover = as.integer(lover),  
 lies = as.integer(lies),  
 cover\_up = as.integer(cover\_up),  
 advantage = as.integer(advantage),  
 get\_even = as.integer(get\_even),  
 behind\_back = as.integer(behind\_back),  
 private\_talk = as.integer(private\_talk),  
 take\_things = as.integer(take\_things),  
 gossip = as.integer(gossip),  
 id = as.factor(id))

Rename values & socially desirable items in prescreen data to match names in main data:

Combine all data

* First, combine Psych Hum Subj data with Prescreen data based on id
* Second, add Mktg Hum Subj data
* Third, add gen UO Pop data

combine1 <- merge(raw\_psych\_hum\_subj, merged\_prescreen, by = "id")  
combine2 <- smartbind(combine1, raw\_mktg\_hum\_subj)  
combine3 <- smartbind(combine2, raw\_gen\_uo\_pop)

## Remove duplicate cases

Identify duplicate cases

# first, add unique row #s  
combine3 <- combine3 %>%  
 mutate(row = 1:nrow(combine3))  
  
combine3[duplicated(combine3$id),] # Only rows 1 through 858 have unique id #s  
  
# write.csv(combine3, "combined\_data.csv")

Row IDs to remove:

* 13 (participant’s second time completing study)
* 134 (participant didn’t complete study first time)
* 145 (participant didn’t complete study first time)
* 308 (participant’s second time completing study)
* 672 (participant’s second time completing study)
* 743 (participant didn’t complete study first time)
* 790 (participant didn’t complete study first time)
* 800 (participant didn’t complete study first time)

Remove duplicate rows after resolving:

combine3 <- combine3 %>%  
 filter(!row %in% c(13, 134, 145, 308, 672, 743, 790, 800))

## Remove rows of all NAs

Identify completely missing rows:

key\_vars <- combine3 %>%  
 dplyr::select(row, big\_2\_1:big\_2\_65, consumer\_intentions\_1:consumer\_intentions\_9, consumer\_behaviors, clothing\_interest\_1:clothing\_interest\_20, ingroup\_ident\_1:ingroup\_ident\_14, values\_1:values\_16, socially\_desirable\_1:socially\_desirable\_16, source)  
  
ncol(key\_vars) # number of columns - the row # & source column = 141  
  
all\_NA\_rows <- key\_vars[rowSums(is.na(key\_vars)) == 141,] # identify rows with 141 NAs (all missing values), row numbers are preserved  
  
all\_NA\_rows

Removing rows of fully missing data

data <- combine3 %>%  
 dplyr::filter(!row %in% c(859, 860, 900, 926, 927, 941, 1139, 1141, 1142, 1143, 1144, 1146, 1149, 1150, 1152)) %>% # remove rows containing all NAs  
 dplyr::select(-StartDate, -EndDate, -Status, -Progress, -"Duration (in seconds)", -Finished, -RecordedDate, -ResponseId, -DistributionChannel, -UserLanguage, -big\_2\_DO, -consumer\_intentions\_DO, -consumer\_behaviors\_DO, -clothing\_interest\_DO, -ingroup\_ident\_DO, -full\_name, -code, -socially\_desirable\_DO, -values\_DO, -email\_giftcard, -term) # removing variables not in analysis

## Number per source

table(data$source)

##   
## gen\_UO mktg\_hsp psych\_hsp   
## 7 276 850

* 850 = psych human subjects pool
* 276 = mktg human subjects pool
* 7 = general UO pop

Rename variables

data <- data %>%  
 rename("framing\_condition" = "framing\_condition\_DO",   
 "norm\_condition" = "norm\_condition\_DO")

Drop unused levels

Re-order levels of norm condition

data$norm\_condition <- factor(data$norm\_condition, levels = c("control\_norm", "descriptive\_norm", "convention\_norm", "social\_norm", "moral\_norm"))

## Inspect final data

str(data, list.len = ncol(data))  
  
# write.csv(data, "final\_data.csv")

# Aggregate Variables

## Personality

### Reverse-code

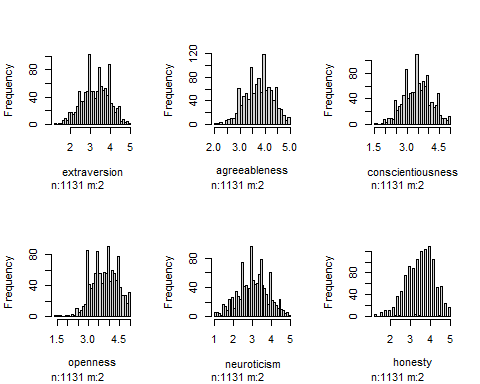
data\_R <- data %>%  
 mutate(across(c(big\_2\_11,  
 big\_2\_16,  
 big\_2\_26,  
 big\_2\_31,  
 big\_2\_36,  
 big\_2\_51,  
 big\_2\_12,  
 big\_2\_17,  
 big\_2\_22,  
 big\_2\_37,  
 big\_2\_42,  
 big\_2\_47,  
 big\_2\_3,  
 big\_2\_8,  
 big\_2\_23,  
 big\_2\_28,  
 big\_2\_48,  
 big\_2\_58,  
 big\_2\_4,  
 big\_2\_9,  
 big\_2\_24,  
 big\_2\_29,  
 big\_2\_44,  
 big\_2\_49,  
 big\_2\_5,  
 big\_2\_25,  
 big\_2\_30,  
 big\_2\_45,  
 big\_2\_50,  
 big\_2\_55,  
 big\_2\_63), ~6 - .)) # replace '6' with the max possible value plus 1 for any particular scale

### Average items

data\_R$extraversion <- data\_R %>%  
 dplyr::select(big\_2\_1, big\_2\_6, big\_2\_11, big\_2\_16, big\_2\_21, big\_2\_26, big\_2\_31, big\_2\_36, big\_2\_41, big\_2\_46, big\_2\_51, big\_2\_56) %>%  
 rowMeans(na.rm = TRUE)   
  
  
data\_R$conscientiousness <- data\_R %>%  
 dplyr::select(big\_2\_3, big\_2\_8, big\_2\_13, big\_2\_18, big\_2\_23, big\_2\_28, big\_2\_33, big\_2\_38, big\_2\_43, big\_2\_48, big\_2\_53, big\_2\_58) %>%  
 rowMeans(na.rm = TRUE)  
  
  
data\_R$agreeableness <- data\_R %>%  
 dplyr::select(big\_2\_2, big\_2\_7, big\_2\_12, big\_2\_17, big\_2\_22, big\_2\_27, big\_2\_32, big\_2\_37, big\_2\_42, big\_2\_47, big\_2\_52, big\_2\_57) %>%  
 rowMeans(na.rm = TRUE)  
  
  
data\_R$neuroticism <- data\_R %>%  
 dplyr::select(big\_2\_4, big\_2\_9, big\_2\_14, big\_2\_19, big\_2\_24, big\_2\_29, big\_2\_34, big\_2\_39, big\_2\_44, big\_2\_49, big\_2\_54, big\_2\_59) %>%  
 rowMeans(na.rm = TRUE)  
  
  
data\_R$openness <- data\_R %>%  
 dplyr::select(big\_2\_5, big\_2\_10, big\_2\_15, big\_2\_20, big\_2\_25, big\_2\_30, big\_2\_35, big\_2\_40, big\_2\_45, big\_2\_50, big\_2\_55, big\_2\_60) %>%  
 rowMeans(na.rm = TRUE)  
  
  
data\_R$honesty <- data\_R %>%  
 dplyr::select(big\_2\_61, big\_2\_62, big\_2\_63, big\_2\_64, big\_2\_65) %>%  
 rowMeans(na.rm = TRUE)

### Visually inspect

data\_R %>%  
 dplyr::select(extraversion, agreeableness, conscientiousness, openness, neuroticism, honesty) %>%  
 hist()



## Clothing Interest

### Reverse-code

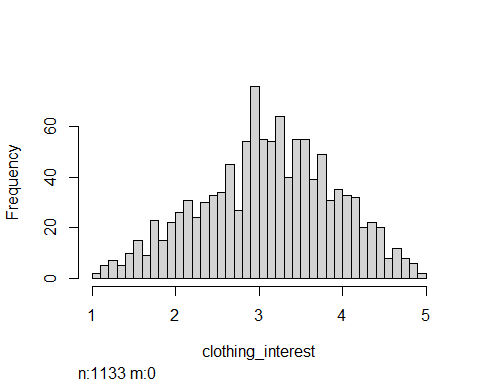
data\_R <- data\_R %>%  
 mutate(across(c(clothing\_interest\_3,  
 clothing\_interest\_5,  
 clothing\_interest\_7,  
 clothing\_interest\_9,  
 clothing\_interest\_12,  
 clothing\_interest\_14,  
 clothing\_interest\_15,  
 clothing\_interest\_16,  
 clothing\_interest\_18,  
 clothing\_interest\_20), ~6 - .)) # replace '#' with the max possible value plus 1 for any particular scale

### Average items

data\_R$clothing\_interest <- data\_R %>%  
 dplyr::select(clothing\_interest\_1:clothing\_interest\_20) %>%  
 rowMeans(na.rm = TRUE)

### Visually Inspect

data\_R %>%  
 dplyr::select(clothing\_interest) %>%  
 hist()



## In-group Identification

### Reverse-code

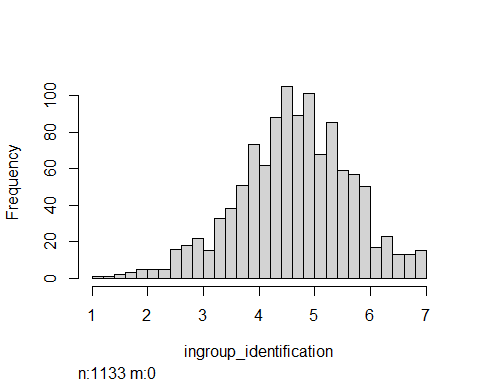
No items need to be reverse-coded.

### Average items

data\_R$ingroup\_identification <- data\_R %>%  
 dplyr::select(ingroup\_ident\_1:ingroup\_ident\_14) %>%  
 rowMeans(na.rm = TRUE)

### Visually Inspect

data\_R %>%  
 dplyr::select(ingroup\_identification) %>%  
 hist()



## Values

### Reverse-code

No items need to be reverse-coded.

### Recoding scale options

Recoding values:

* -3 = 1
* -2 = 2
* -1 = 3
* 0 = 4
* +1 = 5
* +2 = 6
* +3 = 7

table(data\_R$values\_1)

##   
## -3 -2 -1 0 1 2 3   
## 5 10 17 40 176 362 508

data\_R$values\_1\_rec <- recode(data\_R$values\_1, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
  
table(data\_R$values\_1\_rec)

##   
## 1 2 3 4 5 6 7   
## 5 10 17 40 176 362 508

data\_R$values\_2\_rec <- recode(data\_R$values\_2, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_3\_rec <- recode(data\_R$values\_3, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_4\_rec <- recode(data\_R$values\_4, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_5\_rec <- recode(data\_R$values\_5, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_6\_rec <- recode(data\_R$values\_6, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_7\_rec <- recode(data\_R$values\_7, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_8\_rec <- recode(data\_R$values\_8, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_9\_rec <- recode(data\_R$values\_9, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_10\_rec <- recode(data\_R$values\_10, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_11\_rec <- recode(data\_R$values\_11, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_12\_rec <- recode(data\_R$values\_12, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_13\_rec <- recode(data\_R$values\_13, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_14\_rec <- recode(data\_R$values\_14, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_15\_rec <- recode(data\_R$values\_15, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
data\_R$values\_16\_rec <- recode(data\_R$values\_16, `-3` = 1, `-2` = 2, `-1` = 3, `0` = 4, `1` = 5, `2` = 6, `3` = 7)  
  
table(data\_R$values\_16)

##   
## -3 -2 -1 0 1 2 3   
## 4 11 29 116 250 394 312

table(data\_R$values\_16\_rec)

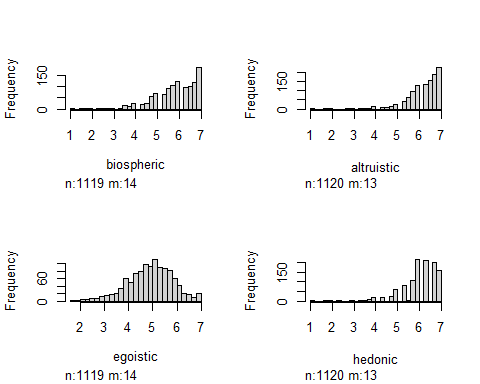
##   
## 1 2 3 4 5 6 7   
## 4 11 29 116 250 394 312

### Average items

data\_R$biospheric <- data\_R %>%  
 dplyr::select(values\_1\_rec:values\_4\_rec) %>%  
 rowMeans(na.rm = TRUE)  
  
data\_R$altruistic <- data\_R %>%  
 dplyr::select(values\_5\_rec:values\_8\_rec) %>%  
 rowMeans(na.rm = TRUE)  
  
data\_R$egoistic <- data\_R %>%  
 dplyr::select(values\_9\_rec:values\_13\_rec) %>%  
 rowMeans(na.rm = TRUE)  
  
data\_R$hedonic <- data\_R %>%  
 dplyr::select(values\_14\_rec:values\_16\_rec) %>%  
 rowMeans(na.rm = TRUE)

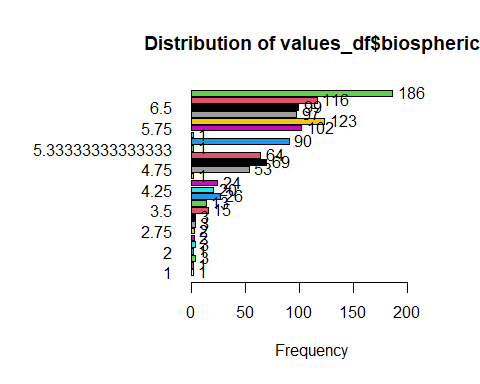
### Visually inspect

values\_df <- data\_R %>%  
 dplyr::select(biospheric, altruistic, egoistic, hedonic)  
  
values\_df %>%  
 hist()



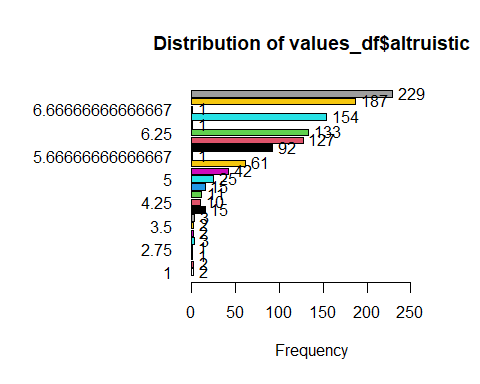
### Frequency tables

# Biospheric values  
tab1(values\_df$biospheric, sort.group = "descending", cum.percent = TRUE, missing = FALSE, horiz = TRUE)



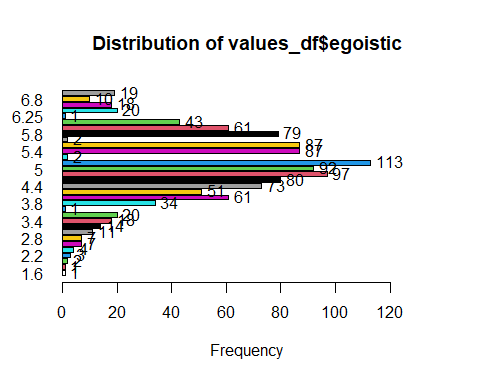
## values\_df$biospheric :   
## Frequency %(NA+) cum.%(NA+) %(NA-) cum.%(NA-)  
## 1 1 0.1 0.1 0.1 0.1  
## 1.5 1 0.1 0.2 0.1 0.2  
## 1.75 3 0.3 0.4 0.3 0.4  
## 2 1 0.1 0.5 0.1 0.5  
## 2.25 3 0.3 0.8 0.3 0.8  
## 2.5 2 0.2 1.0 0.2 1.0  
## 2.75 2 0.2 1.1 0.2 1.2  
## 3 3 0.3 1.4 0.3 1.4  
## 3.25 3 0.3 1.7 0.3 1.7  
## 3.5 15 1.3 3.0 1.3 3.0  
## 3.75 13 1.1 4.1 1.2 4.2  
## 4 26 2.3 6.4 2.3 6.5  
## 4.25 20 1.8 8.2 1.8 8.3  
## 4.5 24 2.1 10.3 2.1 10.5  
## 4.66666666666667 1 0.1 10.4 0.1 10.5  
## 4.75 53 4.7 15.1 4.7 15.3  
## 5 69 6.1 21.2 6.2 21.4  
## 5.25 64 5.6 26.8 5.7 27.2  
## 5.33333333333333 1 0.1 26.9 0.1 27.3  
## 5.5 90 7.9 34.9 8.0 35.3  
## 5.66666666666667 1 0.1 35.0 0.1 35.4  
## 5.75 102 9.0 44.0 9.1 44.5  
## 6 123 10.9 54.8 11.0 55.5  
## 6.25 97 8.6 63.4 8.7 64.2  
## 6.5 99 8.7 72.1 8.8 73.0  
## 6.75 116 10.2 82.3 10.4 83.4  
## 7 186 16.4 98.8 16.6 100.0  
## NaN 14 1.2 100.0 0.0 100.0  
## Total 1133 100.0 100.0 100.0 100.0

# Altruistic values  
tab1(values\_df$altruistic, sort.group = "descending", cum.percent = TRUE, missing = FALSE, horiz = TRUE)



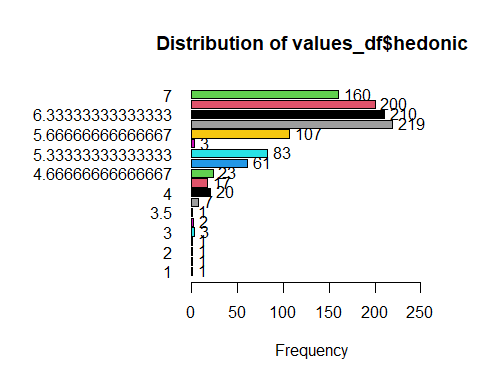
## values\_df$altruistic :   
## Frequency %(NA+) cum.%(NA+) %(NA-) cum.%(NA-)  
## 1 2 0.2 0.2 0.2 0.2  
## 1.75 2 0.2 0.4 0.2 0.4  
## 2 1 0.1 0.4 0.1 0.4  
## 2.75 1 0.1 0.5 0.1 0.5  
## 3 3 0.3 0.8 0.3 0.8  
## 3.25 2 0.2 1.0 0.2 1.0  
## 3.5 2 0.2 1.1 0.2 1.2  
## 3.75 3 0.3 1.4 0.3 1.4  
## 4 15 1.3 2.7 1.3 2.8  
## 4.25 10 0.9 3.6 0.9 3.7  
## 4.5 11 1.0 4.6 1.0 4.6  
## 4.75 15 1.3 5.9 1.3 6.0  
## 5 25 2.2 8.1 2.2 8.2  
## 5.25 42 3.7 11.8 3.8 12.0  
## 5.5 61 5.4 17.2 5.4 17.4  
## 5.66666666666667 1 0.1 17.3 0.1 17.5  
## 5.75 92 8.1 25.4 8.2 25.7  
## 6 127 11.2 36.6 11.3 37.1  
## 6.25 133 11.7 48.4 11.9 48.9  
## 6.33333333333333 1 0.1 48.5 0.1 49.0  
## 6.5 154 13.6 62.0 13.8 62.8  
## 6.66666666666667 1 0.1 62.1 0.1 62.9  
## 6.75 187 16.5 78.6 16.7 79.6  
## 7 229 20.2 98.9 20.4 100.0  
## NaN 13 1.1 100.0 0.0 100.0  
## Total 1133 100.0 100.0 100.0 100.0

# Egoistic values  
tab1(values\_df$egoistic, sort.group = "descending", cum.percent = TRUE, missing = FALSE, horiz = TRUE)



## values\_df$egoistic :   
## Frequency %(NA+) cum.%(NA+) %(NA-) cum.%(NA-)  
## 1.6 1 0.1 0.1 0.1 0.1  
## 1.8 1 0.1 0.2 0.1 0.2  
## 2 2 0.2 0.4 0.2 0.4  
## 2.2 3 0.3 0.6 0.3 0.6  
## 2.4 4 0.4 1.0 0.4 1.0  
## 2.6 7 0.6 1.6 0.6 1.6  
## 2.8 7 0.6 2.2 0.6 2.2  
## 3 11 1.0 3.2 1.0 3.2  
## 3.2 14 1.2 4.4 1.3 4.5  
## 3.4 18 1.6 6.0 1.6 6.1  
## 3.6 20 1.8 7.8 1.8 7.9  
## 3.75 1 0.1 7.9 0.1 8.0  
## 3.8 34 3.0 10.9 3.0 11.0  
## 4 61 5.4 16.2 5.5 16.4  
## 4.2 51 4.5 20.7 4.6 21.0  
## 4.4 73 6.4 27.2 6.5 27.5  
## 4.6 80 7.1 34.2 7.1 34.7  
## 4.8 97 8.6 42.8 8.7 43.3  
## 5 92 8.1 50.9 8.2 51.6  
## 5.2 113 10.0 60.9 10.1 61.7  
## 5.25 2 0.2 61.1 0.2 61.8  
## 5.4 87 7.7 68.8 7.8 69.6  
## 5.6 87 7.7 76.4 7.8 77.4  
## 5.75 2 0.2 76.6 0.2 77.6  
## 5.8 79 7.0 83.6 7.1 84.6  
## 6 61 5.4 89.0 5.5 90.1  
## 6.2 43 3.8 92.8 3.8 93.9  
## 6.25 1 0.1 92.9 0.1 94.0  
## 6.4 20 1.8 94.6 1.8 95.8  
## 6.6 18 1.6 96.2 1.6 97.4  
## 6.8 10 0.9 97.1 0.9 98.3  
## 7 19 1.7 98.8 1.7 100.0  
## NaN 14 1.2 100.0 0.0 100.0  
## Total 1133 100.0 100.0 100.0 100.0

# Hedonic values  
tab1(values\_df$hedonic, sort.group = "descending", cum.percent = TRUE, missing = FALSE, horiz = TRUE)



## values\_df$hedonic :   
## Frequency %(NA+) cum.%(NA+) %(NA-) cum.%(NA-)  
## 1 1 0.1 0.1 0.1 0.1  
## 1.66666666666667 1 0.1 0.2 0.1 0.2  
## 2 1 0.1 0.3 0.1 0.3  
## 2.33333333333333 1 0.1 0.4 0.1 0.4  
## 3 3 0.3 0.6 0.3 0.6  
## 3.33333333333333 2 0.2 0.8 0.2 0.8  
## 3.5 1 0.1 0.9 0.1 0.9  
## 3.66666666666667 7 0.6 1.5 0.6 1.5  
## 4 20 1.8 3.3 1.8 3.3  
## 4.33333333333333 17 1.5 4.8 1.5 4.8  
## 4.66666666666667 23 2.0 6.8 2.1 6.9  
## 5 61 5.4 12.2 5.4 12.3  
## 5.33333333333333 83 7.3 19.5 7.4 19.7  
## 5.5 3 0.3 19.8 0.3 20.0  
## 5.66666666666667 107 9.4 29.2 9.6 29.6  
## 6 219 19.3 48.5 19.6 49.1  
## 6.33333333333333 210 18.5 67.1 18.8 67.9  
## 6.66666666666667 200 17.7 84.7 17.9 85.7  
## 7 160 14.1 98.9 14.3 100.0  
## NaN 13 1.1 100.0 0.0 100.0  
## Total 1133 100.0 100.0 100.0 100.0

## Socially Desirable Responding

### Reverse-code

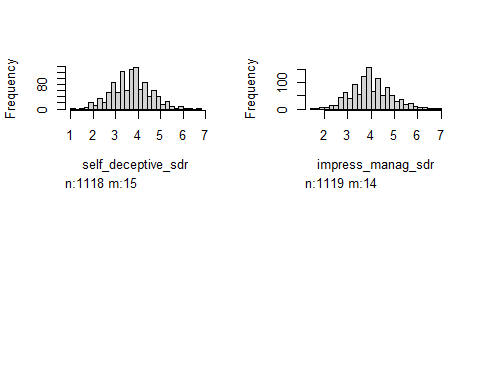
data\_R <- data\_R %>%  
 mutate(across(c(socially\_desirable\_1,  
 socially\_desirable\_3,  
 socially\_desirable\_5,  
 socially\_desirable\_8,  
 socially\_desirable\_9,  
 socially\_desirable\_11,  
 socially\_desirable\_12,  
 socially\_desirable\_13), ~8 - .)) # replace '#' with the max possible value plus 1 for any particular scale

### Average items

data\_R$self\_deceptive\_sdr <- data\_R %>%  
 dplyr::select(socially\_desirable\_1:socially\_desirable\_8) %>%  
 rowMeans(na.rm = TRUE)  
   
data\_R$impress\_manag\_sdr <- data\_R %>%  
 dplyr::select(socially\_desirable\_9:socially\_desirable\_16) %>%  
 rowMeans(na.rm = TRUE)

### Visually inspect

data\_R %>%  
 dplyr::select(self\_deceptive\_sdr, impress\_manag\_sdr) %>%  
 hist()



## Consumer Intentions

### Reverse-code

Higher scores mean better consumer intentions (intentions to *reduce* future consumption):

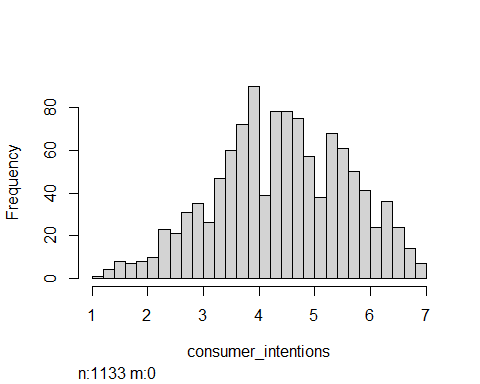
data\_R <- data\_R %>%  
 mutate(across(c(consumer\_intentions\_2,  
 consumer\_intentions\_4,  
 consumer\_intentions\_7,  
 consumer\_intentions\_9), ~8 - .)) # replace '#' with the max possible value plus 1 for any particular scale

### Average items

data\_R$consumer\_intentions <- data\_R %>%  
 dplyr::select(consumer\_intentions\_1:consumer\_intentions\_9) %>%  
 rowMeans(na.rm = TRUE)

### Visually inspect

data\_R %>%  
 dplyr::select(consumer\_intentions) %>%  
 hist()



# Contrast Coding

Subset variables

Contrast Coding using ifelse() approach:

# Framing  
data\_R\_alt$FramingCode1 <- ifelse(data\_R\_alt$framing\_condition == "control\_framing", -1/2, ifelse(data\_R\_alt$framing\_condition == "self\_enh\_framing", 1/2, 0))  
  
data\_R\_alt$FramingCode2 <- ifelse(data\_R\_alt$framing\_condition == "pro\_env\_framing", 2/3, -1/3)  
  
  
# Norm  
data\_R\_alt$NormCode1 <- ifelse(data\_R\_alt$norm\_condition == "moral\_norm", 4, -1)  
  
data\_R\_alt$NormCode2 <- ifelse(data\_R\_alt$norm\_condition == "social\_norm", 3, ifelse(data\_R\_alt$norm\_condition == "moral\_norm", 0, -1))  
  
data\_R\_alt$NormCode3 <- ifelse(data\_R\_alt$norm\_condition == "convention\_norm", 2, ifelse(data\_R\_alt$norm\_condition == "moral\_norm", 0, ifelse(data\_R\_alt$norm\_condition == "social\_norm", 0, -1)))  
data\_R\_alt$NormCode4 <- ifelse(data\_R\_alt$norm\_condition == "descriptive\_norm", 1, ifelse(data\_R\_alt$norm\_condition == "control\_norm", -1, 0))  
  
  
## Adding contrast codes to Framing & Norm Condition  
# Framing  
FrameCode1 <- c(-1/2, 0, 1/2) # control vs self-enhancing  
FrameCode2 <- c(-1/3, 2/3, -1/3) # arbitrary code  
  
contrasts(data\_R\_alt$framing\_condition) <- cbind(FrameCode1, FrameCode2)  
contrasts(data\_R\_alt$framing\_condition)

## FrameCode1 FrameCode2  
## control\_framing -0.5 -0.3333333  
## pro\_env\_framing 0.0 0.6666667  
## self\_enh\_framing 0.5 -0.3333333

# Norm  
contrasts(data\_R\_alt$norm\_condition) <- contr.helmert(5)  
contrasts(data\_R\_alt$norm\_condition) # control vs DN

## [,1] [,2] [,3] [,4]  
## control\_norm -1 -1 -1 -1  
## descriptive\_norm 1 -1 -1 -1  
## convention\_norm 0 2 -1 -1  
## social\_norm 0 0 3 -1  
## moral\_norm 0 0 0 4

# Gender  
levels(data\_R\_alt$Gender) <- c("Woman", "Man", "Non-binary", "I prefer not to identify", "Other")  
  
data\_R\_alt$Gender[data\_R\_alt$Gender == "Non-binary"] <- NA  
data\_R\_alt$Gender[data\_R\_alt$Gender == "I prefer not to identify"] <- NA  
data\_R\_alt$Gender[data\_R\_alt$Gender == "Other"] <- NA  
  
data\_R\_alt$Gender <- droplevels(data\_R\_alt$Gender)  
  
contrasts(data\_R\_alt$Gender) <- c(1, 0)  
levels(data\_R\_alt$Gender)

## [1] "Woman" "Man"

Coding consumer\_behaviors 0/1 and numeric because required by smcfcs imputation function:

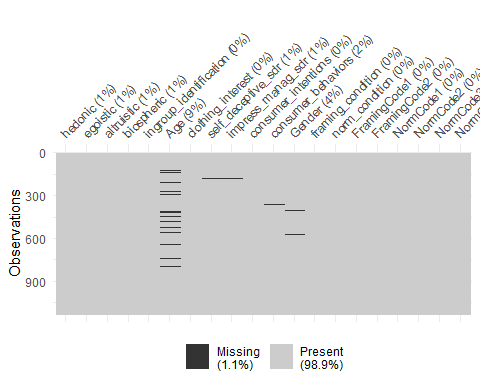
data\_R\_alt$consumer\_behaviors <- as.numeric(data\_R\_alt$consumer\_behaviors)  
  
data\_R\_alt$consumer\_behaviors <- ifelse(data\_R\_alt$consumer\_behaviors == 1, 0, 1)

# Multiple Imputation

## Examine Missingness

Examine missingness:

data\_R\_alt %>%  
 vis\_miss()



Variables with NO missing data:

* ingroup\_identification
* clothing\_interest
* consumer\_intentions
* framing\_condition
* norm\_condition

## Adding interaction terms

## Imputation Model

set.seed(114950518)

## [1] "Outcome variable(s): consumer\_behaviors"  
## [1] "Passive variables: framing1Xbiospheric,framing2Xbiospheric,norm1Xbiospheric,norm2Xbiospheric,norm3Xbiospheric,norm4Xbiospheric,framing1Xnorm1Xbiospheric,framing1Xnorm2Xbiospheric,framing1Xnorm3Xbiospheric,framing1Xnorm4Xbiospheric,framing2Xnorm1Xbiospheric,framing2Xnorm2Xbiospheric,framing2Xnorm3Xbiospheric,framing2Xnorm4Xbiospheric,framing1Xaltruistic,framing2Xaltruistic,norm1Xaltruistic,norm2Xaltruistic,norm3Xaltruistic,norm4Xaltruistic,framing1Xnorm1Xaltruistic,framing1Xnorm2Xaltruistic,framing1Xnorm3Xaltruistic,framing1Xnorm4Xaltruistic,framing2Xnorm1Xaltruistic,framing2Xnorm2Xaltruistic,framing2Xnorm3Xaltruistic,framing2Xnorm4Xaltruistic,framing1Xegoistic,framing2Xegoistic,norm1Xegoistic,norm2Xegoistic,norm3Xegoistic,norm4Xegoistic,framing1Xnorm1Xegoistic,framing1Xnorm2Xegoistic,framing1Xnorm3Xegoistic,framing1Xnorm4Xegoistic,framing2Xnorm1Xegoistic,framing2Xnorm2Xegoistic,framing2Xnorm3Xegoistic,framing2Xnorm4Xegoistic,framing1Xhedonic,framing2Xhedonic,norm1Xhedonic,norm2Xhedonic,norm3Xhedonic,norm4Xhedonic,framing1Xnorm1Xhedonic,framing1Xnorm2Xhedonic,framing1Xnorm3Xhedonic,framing1Xnorm4Xhedonic,framing2Xnorm1Xhedonic,framing2Xnorm2Xhedonic,framing2Xnorm3Xhedonic,framing2Xnorm4Xhedonic"  
## [1] "Partially obs. variables: hedonic,egoistic,altruistic,biospheric,Age,self\_deceptive\_sdr,impress\_manag\_sdr,Gender"  
## [1] "Fully obs. substantive model variables: ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup"  
## [1] "Imputation 1"  
## [1] "Imputing missing outcomes using specified substantive model."  
## [1] "Imputing: hedonic using egoistic,altruistic,biospheric,Age,self\_deceptive\_sdr,impress\_manag\_sdr,Gender,ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup plus outcome"  
## [1] "Imputing: egoistic using hedonic,altruistic,biospheric,Age,self\_deceptive\_sdr,impress\_manag\_sdr,Gender,ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup plus outcome"  
## [1] "Imputing: altruistic using hedonic,egoistic,biospheric,Age,self\_deceptive\_sdr,impress\_manag\_sdr,Gender,ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup plus outcome"  
## [1] "Imputing: biospheric using hedonic,egoistic,altruistic,Age,self\_deceptive\_sdr,impress\_manag\_sdr,Gender,ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup plus outcome"  
## [1] "Imputing: Age using hedonic,egoistic,altruistic,biospheric,self\_deceptive\_sdr,impress\_manag\_sdr,Gender,ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup plus outcome"  
## [1] "Imputing: self\_deceptive\_sdr using hedonic,egoistic,altruistic,biospheric,Age,impress\_manag\_sdr,Gender,ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup plus outcome"  
## [1] "Imputing: impress\_manag\_sdr using hedonic,egoistic,altruistic,biospheric,Age,self\_deceptive\_sdr,Gender,ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup plus outcome"  
## [1] "Imputing: Gender using hedonic,egoistic,altruistic,biospheric,Age,self\_deceptive\_sdr,impress\_manag\_sdr,ingroup\_identification,clothing\_interest,consumer\_intentions,framing\_condition,norm\_condition,framing1Xingroup,framing2Xingroup,norm1Xingroup,norm2Xingroup,norm3Xingroup,norm4Xingroup,framing1Xnorm1Xingroup,framing1Xnorm2Xingroup,framing1Xnorm3Xingroup,framing1Xnorm4Xingroup,framing2Xnorm1Xingroup,framing2Xnorm2Xingroup,framing2Xnorm3Xingroup,framing2Xnorm4Xingroup plus outcome"  
## [1] "Imputation 2"  
## [1] "Imputation 3"  
## [1] "Imputation 4"  
## [1] "Imputation 5"

Storing imputed data sets

impobject <- imputationList(imps$impDatasets)

Restrict range of values on imputed variables

# bio values  
impobject$imputations[[1]]$biospheric <- ifelse(impobject$imputations[[1]]$biospheric > 7, 7, impobject$imputations[[1]]$biospheric)  
  
impobject$imputations[[2]]$biospheric <- ifelse(impobject$imputations[[2]]$biospheric > 7, 7, impobject$imputations[[2]]$biospheric)  
  
impobject$imputations[[3]]$biospheric <- ifelse(impobject$imputations[[3]]$biospheric > 7, 7, impobject$imputations[[3]]$biospheric)  
  
impobject$imputations[[4]]$biospheric <- ifelse(impobject$imputations[[4]]$biospheric > 7, 7, impobject$imputations[[4]]$biospheric)  
  
impobject$imputations[[5]]$biospheric <- ifelse(impobject$imputations[[5]]$biospheric > 7, 7, impobject$imputations[[5]]$biospheric)  
  
  
# alt values  
impobject$imputations[[1]]$altruistic <- ifelse(impobject$imputations[[1]]$altruistic > 7, 7, impobject$imputations[[1]]$altruistic)  
  
impobject$imputations[[2]]$altruistic <- ifelse(impobject$imputations[[2]]$altruistic > 7, 7, impobject$imputations[[2]]$altruistic)  
  
impobject$imputations[[3]]$altruistic <- ifelse(impobject$imputations[[3]]$altruistic > 7, 7, impobject$imputations[[3]]$altruistic)  
  
impobject$imputations[[4]]$altruistic <- ifelse(impobject$imputations[[4]]$altruistic > 7, 7, impobject$imputations[[4]]$altruistic)  
  
impobject$imputations[[5]]$altruistic <- ifelse(impobject$imputations[[5]]$altruistic > 7, 7, impobject$imputations[[5]]$altruistic)  
  
  
# ego values  
impobject$imputations[[1]]$egoistic <- ifelse(impobject$imputations[[1]]$egoistic > 7, 7, impobject$imputations[[1]]$egoistic)  
  
impobject$imputations[[2]]$egoistic <- ifelse(impobject$imputations[[2]]$egoistic > 7, 7, impobject$imputations[[2]]$egoistic)  
  
impobject$imputations[[3]]$egoistic <- ifelse(impobject$imputations[[3]]$egoistic > 7, 7, impobject$imputations[[3]]$egoistic)  
  
impobject$imputations[[4]]$egoistic <- ifelse(impobject$imputations[[4]]$egoistic > 7, 7, impobject$imputations[[4]]$egoistic)  
  
impobject$imputations[[5]]$egoistic <- ifelse(impobject$imputations[[5]]$egoistic > 7, 7, impobject$imputations[[5]]$egoistic)  
  
  
# hed values  
impobject$imputations[[1]]$hedonic <- ifelse(impobject$imputations[[1]]$hedonic > 7, 7, impobject$imputations[[1]]$hedonic)  
  
impobject$imputations[[2]]$hedonic <- ifelse(impobject$imputations[[2]]$hedonic > 7, 7, impobject$imputations[[2]]$hedonic)  
  
impobject$imputations[[3]]$hedonic <- ifelse(impobject$imputations[[3]]$hedonic > 7, 7, impobject$imputations[[3]]$hedonic)  
  
impobject$imputations[[4]]$hedonic <- ifelse(impobject$imputations[[4]]$hedonic > 7, 7, impobject$imputations[[4]]$hedonic)  
  
impobject$imputations[[5]]$hedonic <- ifelse(impobject$imputations[[5]]$hedonic > 7, 7, impobject$imputations[[5]]$hedonic)  
  
  
# self-deceptive enhancement  
with(impobject, describe(self\_deceptive\_sdr))

## [[1]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 3.72 0.85 3.75 3.71 0.74 1 6.62 5.62 0.13 0.14 0.03  
##   
## [[2]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 3.71 0.86 3.75 3.7 0.74 1 6.62 5.62 0.15 0.14 0.03  
##   
## [[3]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 3.72 0.86 3.75 3.71 0.74 1 6.75 5.75 0.15 0.23 0.03  
##   
## [[4]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 3.72 0.86 3.75 3.71 0.74 1 6.62 5.62 0.14 0.13 0.03  
##   
## [[5]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 3.72 0.85 3.75 3.71 0.74 1 6.62 5.62 0.14 0.14 0.03  
##   
## attr(,"call")  
## with(impobject, describe(self\_deceptive\_sdr))

impobject$imputations[[4]]$self\_deceptive\_sdr <- ifelse(impobject$imputations[[4]]$self\_deceptive\_sdr < 1, 1, impobject$imputations[[4]]$self\_deceptive\_sdr)  
  
  
# impr manag  
with(impobject, describe(impress\_manag\_sdr))

## [[1]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 4.01 0.85 4 3.99 0.74 1.5 7 5.5 0.24 0.14 0.03  
##   
## [[2]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 4.01 0.85 4 3.99 0.74 1.5 7 5.5 0.24 0.14 0.03  
##   
## [[3]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 4.01 0.85 4 3.99 0.74 1.5 7 5.5 0.25 0.16 0.03  
##   
## [[4]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 4 0.85 4 3.99 0.74 1.5 7 5.5 0.25 0.17 0.03  
##   
## [[5]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 4.01 0.85 4 3.99 0.74 1.5 7 5.5 0.27 0.19 0.03  
##   
## attr(,"call")  
## with(impobject, describe(impress\_manag\_sdr))

# Age  
describe(data\_R\_alt$Age)

## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1030 19.87 1.95 19 19.67 1.48 18 50 32 4.91 59.29 0.06

with(impobject, describe(Age))

## [[1]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 19.89 1.94 19.39 19.7 2.06 15.09 50 34.91 4.56 54.97 0.06  
##   
## [[2]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 19.85 1.94 19 19.67 1.48 14.85 50 35.15 4.55 55.63 0.06  
##   
## [[3]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 19.88 1.98 19.05 19.69 1.55 13.77 50 36.23 4.27 50.86 0.06  
##   
## [[4]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 19.88 1.97 19.25 19.7 1.86 14.74 50 35.26 4.37 52.37 0.06  
##   
## [[5]]  
## vars n mean sd median trimmed mad min max range skew kurtosis se  
## X1 1 1133 19.9 1.95 19.48 19.71 2.19 15.37 50 34.63 4.49 53.77 0.06  
##   
## attr(,"call")  
## with(impobject, describe(Age))

impobject$imputations[[1]]$Age <- ifelse(impobject$imputations[[1]]$Age < 18, 18, impobject$imputations[[1]]$Age)  
  
impobject$imputations[[2]]$Age <- ifelse(impobject$imputations[[2]]$Age < 18, 18, impobject$imputations[[2]]$Age)  
  
impobject$imputations[[3]]$Age <- ifelse(impobject$imputations[[3]]$Age < 18, 18, impobject$imputations[[3]]$Age)  
  
impobject$imputations[[4]]$Age <- ifelse(impobject$imputations[[4]]$Age < 18, 18, impobject$imputations[[4]]$Age)  
  
impobject$imputations[[5]]$Age <- ifelse(impobject$imputations[[5]]$Age < 18, 18, impobject$imputations[[5]]$Age)

### Centering continuous predictors

# Biospheric values  
impobject$imputations[[1]]$biospheric\_center <- impobject$imputations[[1]]$biospheric - mean(impobject$imputations[[1]]$biospheric)  
  
impobject$imputations[[2]]$biospheric\_center <- impobject$imputations[[2]]$biospheric - mean(impobject$imputations[[2]]$biospheric)  
  
impobject$imputations[[3]]$biospheric\_center <- impobject$imputations[[3]]$biospheric - mean(impobject$imputations[[3]]$biospheric)  
  
impobject$imputations[[4]]$biospheric\_center <- impobject$imputations[[4]]$biospheric - mean(impobject$imputations[[4]]$biospheric)  
  
impobject$imputations[[5]]$biospheric\_center <- impobject$imputations[[5]]$biospheric - mean(impobject$imputations[[5]]$biospheric)  
  
  
# Altruistic values  
impobject$imputations[[1]]$altruistic\_center <- impobject$imputations[[1]]$altruistic - mean(impobject$imputations[[1]]$altruistic)  
  
impobject$imputations[[2]]$altruistic\_center <- impobject$imputations[[2]]$altruistic - mean(impobject$imputations[[2]]$altruistic)  
  
impobject$imputations[[3]]$altruistic\_center <- impobject$imputations[[3]]$altruistic - mean(impobject$imputations[[3]]$altruistic)  
  
impobject$imputations[[4]]$altruistic\_center <- impobject$imputations[[4]]$altruistic - mean(impobject$imputations[[4]]$altruistic)  
  
impobject$imputations[[5]]$altruistic\_center <- impobject$imputations[[5]]$altruistic - mean(impobject$imputations[[5]]$altruistic)  
  
  
# Egoistic values  
impobject$imputations[[1]]$egoistic\_center <- impobject$imputations[[1]]$egoistic - mean(impobject$imputations[[1]]$egoistic)  
  
impobject$imputations[[2]]$egoistic\_center <- impobject$imputations[[2]]$egoistic - mean(impobject$imputations[[2]]$egoistic)  
  
impobject$imputations[[3]]$egoistic\_center <- impobject$imputations[[3]]$egoistic - mean(impobject$imputations[[3]]$egoistic)  
  
impobject$imputations[[4]]$egoistic\_center <- impobject$imputations[[4]]$egoistic - mean(impobject$imputations[[4]]$egoistic)  
  
impobject$imputations[[5]]$egoistic\_center <- impobject$imputations[[5]]$egoistic - mean(impobject$imputations[[5]]$egoistic)  
  
  
# Hedonic values  
impobject$imputations[[1]]$hedonic\_center <- impobject$imputations[[1]]$hedonic - mean(impobject$imputations[[1]]$hedonic)  
  
impobject$imputations[[2]]$hedonic\_center <- impobject$imputations[[2]]$hedonic - mean(impobject$imputations[[2]]$hedonic)  
  
impobject$imputations[[3]]$hedonic\_center <- impobject$imputations[[3]]$hedonic - mean(impobject$imputations[[3]]$hedonic)  
  
impobject$imputations[[4]]$hedonic\_center <- impobject$imputations[[4]]$hedonic - mean(impobject$imputations[[4]]$hedonic)  
  
impobject$imputations[[5]]$hedonic\_center <- impobject$imputations[[5]]$hedonic - mean(impobject$imputations[[5]]$hedonic)  
  
  
  
# Ingroup identification  
impobject$imputations[[1]]$ingroup\_center <- impobject$imputations[[1]]$ingroup\_identification - mean(impobject$imputations[[1]]$ingroup\_identification)  
  
impobject$imputations[[2]]$ingroup\_center <- impobject$imputations[[2]]$ingroup\_identification - mean(impobject$imputations[[2]]$ingroup\_identification)  
  
impobject$imputations[[3]]$ingroup\_center <- impobject$imputations[[3]]$ingroup\_identification - mean(impobject$imputations[[3]]$ingroup\_identification)  
  
impobject$imputations[[4]]$ingroup\_center <- impobject$imputations[[4]]$ingroup\_identification - mean(impobject$imputations[[4]]$ingroup\_identification)  
  
impobject$imputations[[5]]$ingroup\_center <- impobject$imputations[[5]]$ingroup\_identification - mean(impobject$imputations[[5]]$ingroup\_identification)  
  
  
# Age  
impobject$imputations[[1]]$Age\_center <- impobject$imputations[[1]]$Age - mean(impobject$imputations[[1]]$Age)  
  
impobject$imputations[[2]]$Age\_center <- impobject$imputations[[2]]$Age - mean(impobject$imputations[[2]]$Age)  
  
impobject$imputations[[3]]$Age\_center <- impobject$imputations[[3]]$Age - mean(impobject$imputations[[3]]$Age)  
  
impobject$imputations[[4]]$Age\_center <- impobject$imputations[[4]]$Age - mean(impobject$imputations[[4]]$Age)  
  
impobject$imputations[[5]]$Age\_center <- impobject$imputations[[5]]$Age - mean(impobject$imputations[[5]]$Age)  
  
  
  
# Clothing interest  
impobject$imputations[[1]]$clothing\_center <- impobject$imputations[[1]]$clothing\_interest - mean(impobject$imputations[[1]]$clothing\_interest)  
  
impobject$imputations[[2]]$clothing\_center <- impobject$imputations[[2]]$clothing\_interest - mean(impobject$imputations[[2]]$clothing\_interest)  
  
impobject$imputations[[3]]$clothing\_center <- impobject$imputations[[3]]$clothing\_interest - mean(impobject$imputations[[3]]$clothing\_interest)  
  
impobject$imputations[[4]]$clothing\_center <- impobject$imputations[[4]]$clothing\_interest - mean(impobject$imputations[[4]]$clothing\_interest)  
  
impobject$imputations[[5]]$clothing\_center <- impobject$imputations[[5]]$clothing\_interest - mean(impobject$imputations[[5]]$clothing\_interest)  
  
  
  
# Self deceptive SDR  
impobject$imputations[[1]]$self\_dec\_center <- impobject$imputations[[1]]$self\_deceptive\_sdr - mean(impobject$imputations[[1]]$self\_deceptive\_sdr)  
  
impobject$imputations[[2]]$self\_dec\_center <- impobject$imputations[[2]]$self\_deceptive\_sdr - mean(impobject$imputations[[2]]$self\_deceptive\_sdr)  
  
impobject$imputations[[3]]$self\_dec\_center <- impobject$imputations[[3]]$self\_deceptive\_sdr - mean(impobject$imputations[[3]]$self\_deceptive\_sdr)  
  
impobject$imputations[[4]]$self\_dec\_center <- impobject$imputations[[4]]$self\_deceptive\_sdr - mean(impobject$imputations[[4]]$self\_deceptive\_sdr)  
  
impobject$imputations[[5]]$self\_dec\_center <- impobject$imputations[[5]]$self\_deceptive\_sdr - mean(impobject$imputations[[5]]$self\_deceptive\_sdr)  
  
  
# Impression management SDR  
impobject$imputations[[1]]$impress\_manag\_center <- impobject$imputations[[1]]$impress\_manag\_sdr - mean(impobject$imputations[[1]]$impress\_manag\_sdr)  
  
impobject$imputations[[2]]$impress\_manag\_center <- impobject$imputations[[2]]$impress\_manag\_sdr - mean(impobject$imputations[[2]]$impress\_manag\_sdr)  
  
impobject$imputations[[3]]$impress\_manag\_center <- impobject$imputations[[3]]$impress\_manag\_sdr - mean(impobject$imputations[[3]]$impress\_manag\_sdr)  
  
impobject$imputations[[4]]$impress\_manag\_center <- impobject$imputations[[4]]$impress\_manag\_sdr - mean(impobject$imputations[[4]]$impress\_manag\_sdr)  
  
impobject$imputations[[5]]$impress\_manag\_center <- impobject$imputations[[5]]$impress\_manag\_sdr - mean(impobject$imputations[[5]]$impress\_manag\_sdr)  
  
# Coding Gender  
contrasts(impobject$imputations[[1]]$Gender) <- c(1/2, -1/2)  
contrasts(impobject$imputations[[2]]$Gender) <- c(1/2, -1/2)  
contrasts(impobject$imputations[[3]]$Gender) <- c(1/2, -1/2)  
contrasts(impobject$imputations[[4]]$Gender) <- c(1/2, -1/2)  
contrasts(impobject$imputations[[5]]$Gender) <- c(1/2, -1/2)

Convert scmfcs object to a mids object (to make the object compatible with mice, and thus, emmeans):

mids\_obj <- datlist2mids(impobject)

Complete data set:

# Logistic Analysis (DV = Consumer Behaviors)

Consumer Behaviors

* 0 = New Clothing
* 1 = Secondhand Clothing

## Running Model

log\_pool\_obj <- pool(log\_mice)

* df\_residual = 1038
* residual deviance: 1329

## Model Summary

Full summary

## Pooled Regression Results

summary(pool(log\_mice)) %>%  
 knitr::kable(digits = 3)

| term | estimate | std.error | statistic | df | p.value |
| --- | --- | --- | --- | --- | --- |
| (Intercept) | -0.154 | 0.074 | -2.092 | 811.847 | 0.037 |
| framing\_conditionFrameCode1 | 0.123 | 0.174 | 0.708 | 882.439 | 0.479 |
| framing\_conditionFrameCode2 | 0.504 | 0.152 | 3.324 | 937.441 | 0.001 |
| norm\_condition1 | 0.137 | 0.113 | 1.216 | 894.465 | 0.224 |
| norm\_condition2 | 0.002 | 0.065 | 0.032 | 984.072 | 0.974 |
| norm\_condition3 | 0.013 | 0.045 | 0.291 | 1025.111 | 0.771 |
| norm\_condition4 | 0.017 | 0.036 | 0.484 | 955.659 | 0.628 |
| biospheric\_center | 0.508 | 0.106 | 4.801 | 1004.891 | 0.000 |
| altruistic\_center | 0.226 | 0.148 | 1.526 | 946.390 | 0.127 |
| egoistic\_center | -0.729 | 0.100 | -7.294 | 751.725 | 0.000 |
| hedonic\_center | 0.008 | 0.121 | 0.066 | 847.891 | 0.948 |
| ingroup\_center | 0.010 | 0.073 | 0.140 | 856.019 | 0.888 |
| self\_dec\_center | -0.236 | 0.090 | -2.621 | 1033.255 | 0.009 |
| impress\_manag\_center | -0.226 | 0.088 | -2.556 | 984.405 | 0.011 |
| clothing\_center | 0.051 | 0.095 | 0.539 | 1002.212 | 0.590 |
| Gender1 | -0.014 | 0.170 | -0.080 | 219.027 | 0.936 |
| Age\_center | -0.087 | 0.050 | -1.733 | 57.425 | 0.088 |
| framing\_conditionFrameCode1:norm\_condition1 | 0.463 | 0.268 | 1.732 | 1018.113 | 0.084 |
| framing\_conditionFrameCode2:norm\_condition1 | 0.348 | 0.244 | 1.427 | 1000.360 | 0.154 |
| framing\_conditionFrameCode1:norm\_condition2 | -0.058 | 0.163 | -0.355 | 829.435 | 0.723 |
| framing\_conditionFrameCode2:norm\_condition2 | -0.010 | 0.134 | -0.072 | 1020.077 | 0.943 |
| framing\_conditionFrameCode1:norm\_condition3 | 0.063 | 0.108 | 0.584 | 936.829 | 0.559 |
| framing\_conditionFrameCode2:norm\_condition3 | 0.086 | 0.099 | 0.869 | 1027.197 | 0.385 |
| framing\_conditionFrameCode1:norm\_condition4 | 0.027 | 0.091 | 0.299 | 532.635 | 0.765 |
| framing\_conditionFrameCode2:norm\_condition4 | -0.041 | 0.075 | -0.554 | 838.856 | 0.580 |
| framing\_conditionFrameCode1:biospheric\_center | -0.187 | 0.269 | -0.693 | 1010.638 | 0.488 |
| framing\_conditionFrameCode2:biospheric\_center | 0.390 | 0.214 | 1.828 | 966.989 | 0.068 |
| norm\_condition1:biospheric\_center | 0.274 | 0.163 | 1.683 | 953.880 | 0.093 |
| norm\_condition2:biospheric\_center | 0.062 | 0.094 | 0.661 | 941.570 | 0.509 |
| norm\_condition3:biospheric\_center | 0.008 | 0.066 | 0.124 | 929.196 | 0.901 |
| norm\_condition4:biospheric\_center | 0.012 | 0.059 | 0.206 | 718.240 | 0.837 |
| framing\_conditionFrameCode1:altruistic\_center | 0.702 | 0.354 | 1.985 | 1018.329 | 0.047 |
| framing\_conditionFrameCode2:altruistic\_center | -0.768 | 0.304 | -2.529 | 962.726 | 0.012 |
| norm\_condition1:altruistic\_center | -0.545 | 0.243 | -2.245 | 985.715 | 0.025 |
| norm\_condition2:altruistic\_center | 0.203 | 0.129 | 1.577 | 1034.112 | 0.115 |
| norm\_condition3:altruistic\_center | 0.079 | 0.095 | 0.829 | 1003.032 | 0.407 |
| norm\_condition4:altruistic\_center | 0.065 | 0.069 | 0.950 | 491.638 | 0.343 |
| framing\_conditionFrameCode1:egoistic\_center | -0.495 | 0.237 | -2.087 | 892.821 | 0.037 |
| framing\_conditionFrameCode2:egoistic\_center | -0.105 | 0.202 | -0.517 | 1034.637 | 0.605 |
| norm\_condition1:egoistic\_center | 0.022 | 0.158 | 0.137 | 955.965 | 0.891 |
| norm\_condition2:egoistic\_center | -0.049 | 0.086 | -0.573 | 1022.179 | 0.567 |
| norm\_condition3:egoistic\_center | 0.057 | 0.058 | 0.972 | 910.694 | 0.332 |
| norm\_condition4:egoistic\_center | -0.039 | 0.051 | -0.768 | 779.884 | 0.443 |
| framing\_conditionFrameCode1:hedonic\_center | -0.236 | 0.293 | -0.807 | 939.087 | 0.420 |
| framing\_conditionFrameCode2:hedonic\_center | 0.007 | 0.252 | 0.027 | 913.626 | 0.979 |
| norm\_condition1:hedonic\_center | -0.028 | 0.195 | -0.142 | 937.344 | 0.887 |
| norm\_condition2:hedonic\_center | -0.062 | 0.108 | -0.579 | 1033.422 | 0.563 |
| norm\_condition3:hedonic\_center | -0.090 | 0.077 | -1.159 | 906.439 | 0.247 |
| norm\_condition4:hedonic\_center | -0.029 | 0.057 | -0.505 | 960.152 | 0.614 |
| framing\_conditionFrameCode1:ingroup\_center | 0.023 | 0.175 | 0.130 | 999.829 | 0.896 |
| framing\_conditionFrameCode2:ingroup\_center | 0.070 | 0.152 | 0.459 | 1015.900 | 0.647 |
| norm\_condition1:ingroup\_center | -0.042 | 0.109 | -0.387 | 1013.442 | 0.699 |
| norm\_condition2:ingroup\_center | -0.027 | 0.068 | -0.402 | 1000.683 | 0.688 |
| norm\_condition3:ingroup\_center | 0.012 | 0.046 | 0.265 | 965.347 | 0.791 |
| norm\_condition4:ingroup\_center | -0.027 | 0.037 | -0.737 | 532.824 | 0.461 |
| framing\_conditionFrameCode1:norm\_condition1:biospheric\_center | -0.328 | 0.397 | -0.827 | 937.252 | 0.409 |
| framing\_conditionFrameCode2:norm\_condition1:biospheric\_center | -0.096 | 0.345 | -0.277 | 982.189 | 0.782 |
| framing\_conditionFrameCode1:norm\_condition2:biospheric\_center | 0.150 | 0.236 | 0.634 | 952.575 | 0.526 |
| framing\_conditionFrameCode2:norm\_condition2:biospheric\_center | -0.053 | 0.193 | -0.277 | 968.583 | 0.782 |
| framing\_conditionFrameCode1:norm\_condition3:biospheric\_center | 0.111 | 0.167 | 0.663 | 922.000 | 0.508 |
| framing\_conditionFrameCode2:norm\_condition3:biospheric\_center | -0.022 | 0.131 | -0.168 | 1022.771 | 0.867 |
| framing\_conditionFrameCode1:norm\_condition4:biospheric\_center | 0.333 | 0.157 | 2.115 | 721.925 | 0.035 |
| framing\_conditionFrameCode2:norm\_condition4:biospheric\_center | -0.050 | 0.112 | -0.449 | 674.058 | 0.654 |
| framing\_conditionFrameCode1:norm\_condition1:altruistic\_center | 0.082 | 0.567 | 0.145 | 987.332 | 0.885 |
| framing\_conditionFrameCode2:norm\_condition1:altruistic\_center | 0.360 | 0.535 | 0.672 | 987.424 | 0.502 |
| framing\_conditionFrameCode1:norm\_condition2:altruistic\_center | -0.101 | 0.315 | -0.320 | 1024.699 | 0.749 |
| framing\_conditionFrameCode2:norm\_condition2:altruistic\_center | 0.466 | 0.275 | 1.697 | 1028.550 | 0.090 |
| framing\_conditionFrameCode1:norm\_condition3:altruistic\_center | -0.107 | 0.241 | -0.445 | 974.544 | 0.657 |
| framing\_conditionFrameCode2:norm\_condition3:altruistic\_center | 0.277 | 0.193 | 1.439 | 1024.859 | 0.150 |
| framing\_conditionFrameCode1:norm\_condition4:altruistic\_center | -0.350 | 0.173 | -2.025 | 909.383 | 0.043 |
| framing\_conditionFrameCode2:norm\_condition4:altruistic\_center | 0.083 | 0.136 | 0.613 | 682.509 | 0.540 |
| framing\_conditionFrameCode1:norm\_condition1:egoistic\_center | -0.002 | 0.399 | -0.005 | 957.783 | 0.996 |
| framing\_conditionFrameCode2:norm\_condition1:egoistic\_center | -0.151 | 0.327 | -0.463 | 832.980 | 0.644 |
| framing\_conditionFrameCode1:norm\_condition2:egoistic\_center | 0.397 | 0.207 | 1.921 | 1018.344 | 0.055 |
| framing\_conditionFrameCode2:norm\_condition2:egoistic\_center | 0.040 | 0.184 | 0.215 | 1029.607 | 0.830 |
| framing\_conditionFrameCode1:norm\_condition3:egoistic\_center | 0.104 | 0.136 | 0.762 | 838.865 | 0.446 |
| framing\_conditionFrameCode2:norm\_condition3:egoistic\_center | -0.065 | 0.129 | -0.501 | 969.872 | 0.617 |
| framing\_conditionFrameCode1:norm\_condition4:egoistic\_center | 0.134 | 0.135 | 0.991 | 167.624 | 0.323 |
| framing\_conditionFrameCode2:norm\_condition4:egoistic\_center | 0.037 | 0.106 | 0.346 | 542.595 | 0.730 |
| framing\_conditionFrameCode1:norm\_condition1:hedonic\_center | 0.311 | 0.477 | 0.653 | 990.283 | 0.514 |
| framing\_conditionFrameCode2:norm\_condition1:hedonic\_center | -0.172 | 0.421 | -0.409 | 622.658 | 0.683 |
| framing\_conditionFrameCode1:norm\_condition2:hedonic\_center | -0.392 | 0.263 | -1.490 | 984.202 | 0.137 |
| framing\_conditionFrameCode2:norm\_condition2:hedonic\_center | 0.142 | 0.231 | 0.613 | 991.022 | 0.540 |
| framing\_conditionFrameCode1:norm\_condition3:hedonic\_center | -0.020 | 0.194 | -0.105 | 766.414 | 0.917 |
| framing\_conditionFrameCode2:norm\_condition3:hedonic\_center | 0.225 | 0.161 | 1.392 | 935.238 | 0.164 |
| framing\_conditionFrameCode1:norm\_condition4:hedonic\_center | -0.043 | 0.141 | -0.305 | 958.514 | 0.760 |
| framing\_conditionFrameCode2:norm\_condition4:hedonic\_center | 0.109 | 0.122 | 0.888 | 525.511 | 0.375 |
| framing\_conditionFrameCode1:norm\_condition1:ingroup\_center | -0.045 | 0.264 | -0.171 | 1009.362 | 0.864 |
| framing\_conditionFrameCode2:norm\_condition1:ingroup\_center | 0.122 | 0.235 | 0.520 | 964.407 | 0.603 |
| framing\_conditionFrameCode1:norm\_condition2:ingroup\_center | 0.249 | 0.174 | 1.429 | 776.747 | 0.153 |
| framing\_conditionFrameCode2:norm\_condition2:ingroup\_center | 0.114 | 0.140 | 0.816 | 985.047 | 0.415 |
| framing\_conditionFrameCode1:norm\_condition3:ingroup\_center | 0.014 | 0.113 | 0.126 | 899.917 | 0.900 |
| framing\_conditionFrameCode2:norm\_condition3:ingroup\_center | 0.043 | 0.098 | 0.442 | 1022.062 | 0.658 |
| framing\_conditionFrameCode1:norm\_condition4:ingroup\_center | -0.030 | 0.086 | -0.346 | 920.724 | 0.729 |
| framing\_conditionFrameCode2:norm\_condition4:ingroup\_center | 0.038 | 0.079 | 0.479 | 715.938 | 0.632 |

APA-style table

pool\_summ <- summary(pool(log\_mice))  
  
apa\_table(pool\_summ,  
 caption = "Pooled Logistic Regression Results",  
 note = "DV = Consumer Behaviors")

(#tab:unnamed-chunk-28)

*Pooled Logistic Regression Results*

| term | estimate | std.error | statistic | df | p.value |
| --- | --- | --- | --- | --- | --- |
| (Intercept) | -0.15 | 0.07 | -2.09 | 811.85 | 0.04 |
| framing\_conditionFrameCode1 | 0.12 | 0.17 | 0.71 | 882.44 | 0.48 |
| framing\_conditionFrameCode2 | 0.50 | 0.15 | 3.32 | 937.44 | 0.00 |
| norm\_condition1 | 0.14 | 0.11 | 1.22 | 894.46 | 0.22 |
| norm\_condition2 | 0.00 | 0.06 | 0.03 | 984.07 | 0.97 |
| norm\_condition3 | 0.01 | 0.05 | 0.29 | 1,025.11 | 0.77 |
| norm\_condition4 | 0.02 | 0.04 | 0.48 | 955.66 | 0.63 |
| biospheric\_center | 0.51 | 0.11 | 4.80 | 1,004.89 | 0.00 |
| altruistic\_center | 0.23 | 0.15 | 1.53 | 946.39 | 0.13 |
| egoistic\_center | -0.73 | 0.10 | -7.29 | 751.72 | 0.00 |
| hedonic\_center | 0.01 | 0.12 | 0.07 | 847.89 | 0.95 |
| ingroup\_center | 0.01 | 0.07 | 0.14 | 856.02 | 0.89 |
| self\_dec\_center | -0.24 | 0.09 | -2.62 | 1,033.26 | 0.01 |
| impress\_manag\_center | -0.23 | 0.09 | -2.56 | 984.40 | 0.01 |
| clothing\_center | 0.05 | 0.10 | 0.54 | 1,002.21 | 0.59 |
| Gender1 | -0.01 | 0.17 | -0.08 | 219.03 | 0.94 |
| Age\_center | -0.09 | 0.05 | -1.73 | 57.42 | 0.09 |
| framing\_conditionFrameCode1:norm\_condition1 | 0.46 | 0.27 | 1.73 | 1,018.11 | 0.08 |
| framing\_conditionFrameCode2:norm\_condition1 | 0.35 | 0.24 | 1.43 | 1,000.36 | 0.15 |
| framing\_conditionFrameCode1:norm\_condition2 | -0.06 | 0.16 | -0.36 | 829.44 | 0.72 |
| framing\_conditionFrameCode2:norm\_condition2 | -0.01 | 0.13 | -0.07 | 1,020.08 | 0.94 |
| framing\_conditionFrameCode1:norm\_condition3 | 0.06 | 0.11 | 0.58 | 936.83 | 0.56 |
| framing\_conditionFrameCode2:norm\_condition3 | 0.09 | 0.10 | 0.87 | 1,027.20 | 0.39 |
| framing\_conditionFrameCode1:norm\_condition4 | 0.03 | 0.09 | 0.30 | 532.64 | 0.76 |
| framing\_conditionFrameCode2:norm\_condition4 | -0.04 | 0.07 | -0.55 | 838.86 | 0.58 |
| framing\_conditionFrameCode1:biospheric\_center | -0.19 | 0.27 | -0.69 | 1,010.64 | 0.49 |
| framing\_conditionFrameCode2:biospheric\_center | 0.39 | 0.21 | 1.83 | 966.99 | 0.07 |
| norm\_condition1:biospheric\_center | 0.27 | 0.16 | 1.68 | 953.88 | 0.09 |
| norm\_condition2:biospheric\_center | 0.06 | 0.09 | 0.66 | 941.57 | 0.51 |
| norm\_condition3:biospheric\_center | 0.01 | 0.07 | 0.12 | 929.20 | 0.90 |
| norm\_condition4:biospheric\_center | 0.01 | 0.06 | 0.21 | 718.24 | 0.84 |
| framing\_conditionFrameCode1:altruistic\_center | 0.70 | 0.35 | 1.98 | 1,018.33 | 0.05 |
| framing\_conditionFrameCode2:altruistic\_center | -0.77 | 0.30 | -2.53 | 962.73 | 0.01 |
| norm\_condition1:altruistic\_center | -0.54 | 0.24 | -2.24 | 985.71 | 0.03 |
| norm\_condition2:altruistic\_center | 0.20 | 0.13 | 1.58 | 1,034.11 | 0.12 |
| norm\_condition3:altruistic\_center | 0.08 | 0.09 | 0.83 | 1,003.03 | 0.41 |
| norm\_condition4:altruistic\_center | 0.07 | 0.07 | 0.95 | 491.64 | 0.34 |
| framing\_conditionFrameCode1:egoistic\_center | -0.49 | 0.24 | -2.09 | 892.82 | 0.04 |
| framing\_conditionFrameCode2:egoistic\_center | -0.10 | 0.20 | -0.52 | 1,034.64 | 0.61 |
| norm\_condition1:egoistic\_center | 0.02 | 0.16 | 0.14 | 955.96 | 0.89 |
| norm\_condition2:egoistic\_center | -0.05 | 0.09 | -0.57 | 1,022.18 | 0.57 |
| norm\_condition3:egoistic\_center | 0.06 | 0.06 | 0.97 | 910.69 | 0.33 |
| norm\_condition4:egoistic\_center | -0.04 | 0.05 | -0.77 | 779.88 | 0.44 |
| framing\_conditionFrameCode1:hedonic\_center | -0.24 | 0.29 | -0.81 | 939.09 | 0.42 |
| framing\_conditionFrameCode2:hedonic\_center | 0.01 | 0.25 | 0.03 | 913.63 | 0.98 |
| norm\_condition1:hedonic\_center | -0.03 | 0.20 | -0.14 | 937.34 | 0.89 |
| norm\_condition2:hedonic\_center | -0.06 | 0.11 | -0.58 | 1,033.42 | 0.56 |
| norm\_condition3:hedonic\_center | -0.09 | 0.08 | -1.16 | 906.44 | 0.25 |
| norm\_condition4:hedonic\_center | -0.03 | 0.06 | -0.50 | 960.15 | 0.61 |
| framing\_conditionFrameCode1:ingroup\_center | 0.02 | 0.17 | 0.13 | 999.83 | 0.90 |
| framing\_conditionFrameCode2:ingroup\_center | 0.07 | 0.15 | 0.46 | 1,015.90 | 0.65 |
| norm\_condition1:ingroup\_center | -0.04 | 0.11 | -0.39 | 1,013.44 | 0.70 |
| norm\_condition2:ingroup\_center | -0.03 | 0.07 | -0.40 | 1,000.68 | 0.69 |
| norm\_condition3:ingroup\_center | 0.01 | 0.05 | 0.27 | 965.35 | 0.79 |
| norm\_condition4:ingroup\_center | -0.03 | 0.04 | -0.74 | 532.82 | 0.46 |
| framing\_conditionFrameCode1:norm\_condition1:biospheric\_center | -0.33 | 0.40 | -0.83 | 937.25 | 0.41 |
| framing\_conditionFrameCode2:norm\_condition1:biospheric\_center | -0.10 | 0.35 | -0.28 | 982.19 | 0.78 |
| framing\_conditionFrameCode1:norm\_condition2:biospheric\_center | 0.15 | 0.24 | 0.63 | 952.58 | 0.53 |
| framing\_conditionFrameCode2:norm\_condition2:biospheric\_center | -0.05 | 0.19 | -0.28 | 968.58 | 0.78 |
| framing\_conditionFrameCode1:norm\_condition3:biospheric\_center | 0.11 | 0.17 | 0.66 | 922.00 | 0.51 |
| framing\_conditionFrameCode2:norm\_condition3:biospheric\_center | -0.02 | 0.13 | -0.17 | 1,022.77 | 0.87 |
| framing\_conditionFrameCode1:norm\_condition4:biospheric\_center | 0.33 | 0.16 | 2.12 | 721.93 | 0.03 |
| framing\_conditionFrameCode2:norm\_condition4:biospheric\_center | -0.05 | 0.11 | -0.45 | 674.06 | 0.65 |
| framing\_conditionFrameCode1:norm\_condition1:altruistic\_center | 0.08 | 0.57 | 0.15 | 987.33 | 0.88 |
| framing\_conditionFrameCode2:norm\_condition1:altruistic\_center | 0.36 | 0.54 | 0.67 | 987.42 | 0.50 |
| framing\_conditionFrameCode1:norm\_condition2:altruistic\_center | -0.10 | 0.31 | -0.32 | 1,024.70 | 0.75 |
| framing\_conditionFrameCode2:norm\_condition2:altruistic\_center | 0.47 | 0.27 | 1.70 | 1,028.55 | 0.09 |
| framing\_conditionFrameCode1:norm\_condition3:altruistic\_center | -0.11 | 0.24 | -0.44 | 974.54 | 0.66 |
| framing\_conditionFrameCode2:norm\_condition3:altruistic\_center | 0.28 | 0.19 | 1.44 | 1,024.86 | 0.15 |
| framing\_conditionFrameCode1:norm\_condition4:altruistic\_center | -0.35 | 0.17 | -2.02 | 909.38 | 0.04 |
| framing\_conditionFrameCode2:norm\_condition4:altruistic\_center | 0.08 | 0.14 | 0.61 | 682.51 | 0.54 |
| framing\_conditionFrameCode1:norm\_condition1:egoistic\_center | 0.00 | 0.40 | 0.00 | 957.78 | 1.00 |
| framing\_conditionFrameCode2:norm\_condition1:egoistic\_center | -0.15 | 0.33 | -0.46 | 832.98 | 0.64 |
| framing\_conditionFrameCode1:norm\_condition2:egoistic\_center | 0.40 | 0.21 | 1.92 | 1,018.34 | 0.06 |
| framing\_conditionFrameCode2:norm\_condition2:egoistic\_center | 0.04 | 0.18 | 0.22 | 1,029.61 | 0.83 |
| framing\_conditionFrameCode1:norm\_condition3:egoistic\_center | 0.10 | 0.14 | 0.76 | 838.87 | 0.45 |
| framing\_conditionFrameCode2:norm\_condition3:egoistic\_center | -0.06 | 0.13 | -0.50 | 969.87 | 0.62 |
| framing\_conditionFrameCode1:norm\_condition4:egoistic\_center | 0.13 | 0.14 | 0.99 | 167.62 | 0.32 |
| framing\_conditionFrameCode2:norm\_condition4:egoistic\_center | 0.04 | 0.11 | 0.35 | 542.60 | 0.73 |
| framing\_conditionFrameCode1:norm\_condition1:hedonic\_center | 0.31 | 0.48 | 0.65 | 990.28 | 0.51 |
| framing\_conditionFrameCode2:norm\_condition1:hedonic\_center | -0.17 | 0.42 | -0.41 | 622.66 | 0.68 |
| framing\_conditionFrameCode1:norm\_condition2:hedonic\_center | -0.39 | 0.26 | -1.49 | 984.20 | 0.14 |
| framing\_conditionFrameCode2:norm\_condition2:hedonic\_center | 0.14 | 0.23 | 0.61 | 991.02 | 0.54 |
| framing\_conditionFrameCode1:norm\_condition3:hedonic\_center | -0.02 | 0.19 | -0.10 | 766.41 | 0.92 |
| framing\_conditionFrameCode2:norm\_condition3:hedonic\_center | 0.22 | 0.16 | 1.39 | 935.24 | 0.16 |
| framing\_conditionFrameCode1:norm\_condition4:hedonic\_center | -0.04 | 0.14 | -0.30 | 958.51 | 0.76 |
| framing\_conditionFrameCode2:norm\_condition4:hedonic\_center | 0.11 | 0.12 | 0.89 | 525.51 | 0.37 |
| framing\_conditionFrameCode1:norm\_condition1:ingroup\_center | -0.05 | 0.26 | -0.17 | 1,009.36 | 0.86 |
| framing\_conditionFrameCode2:norm\_condition1:ingroup\_center | 0.12 | 0.23 | 0.52 | 964.41 | 0.60 |
| framing\_conditionFrameCode1:norm\_condition2:ingroup\_center | 0.25 | 0.17 | 1.43 | 776.75 | 0.15 |
| framing\_conditionFrameCode2:norm\_condition2:ingroup\_center | 0.11 | 0.14 | 0.82 | 985.05 | 0.41 |
| framing\_conditionFrameCode1:norm\_condition3:ingroup\_center | 0.01 | 0.11 | 0.13 | 899.92 | 0.90 |
| framing\_conditionFrameCode2:norm\_condition3:ingroup\_center | 0.04 | 0.10 | 0.44 | 1,022.06 | 0.66 |
| framing\_conditionFrameCode1:norm\_condition4:ingroup\_center | -0.03 | 0.09 | -0.35 | 920.72 | 0.73 |
| framing\_conditionFrameCode2:norm\_condition4:ingroup\_center | 0.04 | 0.08 | 0.48 | 715.94 | 0.63 |

*Note.* DV = Consumer Behaviors

### Odds Ratios

Converting log odds estimates to odds ratios:

ORs\_pool <- cbind(log\_summ\_pool$term, exp(log\_summ\_pool$estimate))  
  
ORs\_pool %>%  
 knitr::kable(digits = 2)

|  |  |
| --- | --- |
| 1 | 0.86 |
| 2 | 1.13 |
| 3 | 1.66 |
| 4 | 1.15 |
| 5 | 1.00 |
| 6 | 1.01 |
| 7 | 1.02 |
| 8 | 1.66 |
| 9 | 1.25 |
| 10 | 0.48 |
| 11 | 1.01 |
| 12 | 1.01 |
| 13 | 0.79 |
| 14 | 0.80 |
| 15 | 1.05 |
| 16 | 0.99 |
| 17 | 0.92 |
| 18 | 1.59 |
| 19 | 1.42 |
| 20 | 0.94 |
| 21 | 0.99 |
| 22 | 1.07 |
| 23 | 1.09 |
| 24 | 1.03 |
| 25 | 0.96 |
| 26 | 0.83 |
| 27 | 1.48 |
| 28 | 1.31 |
| 29 | 1.06 |
| 30 | 1.01 |
| 31 | 1.01 |
| 32 | 2.02 |
| 33 | 0.46 |
| 34 | 0.58 |
| 35 | 1.23 |
| 36 | 1.08 |
| 37 | 1.07 |
| 38 | 0.61 |
| 39 | 0.90 |
| 40 | 1.02 |
| 41 | 0.95 |
| 42 | 1.06 |
| 43 | 0.96 |
| 44 | 0.79 |
| 45 | 1.01 |
| 46 | 0.97 |
| 47 | 0.94 |
| 48 | 0.91 |
| 49 | 0.97 |
| 50 | 1.02 |
| 51 | 1.07 |
| 52 | 0.96 |
| 53 | 0.97 |
| 54 | 1.01 |
| 55 | 0.97 |
| 56 | 0.72 |
| 57 | 0.91 |
| 58 | 1.16 |
| 59 | 0.95 |
| 60 | 1.12 |
| 61 | 0.98 |
| 62 | 1.39 |
| 63 | 0.95 |
| 64 | 1.09 |
| 65 | 1.43 |
| 66 | 0.90 |
| 67 | 1.59 |
| 68 | 0.90 |
| 69 | 1.32 |
| 70 | 0.70 |
| 71 | 1.09 |
| 72 | 1.00 |
| 73 | 0.86 |
| 74 | 1.49 |
| 75 | 1.04 |
| 76 | 1.11 |
| 77 | 0.94 |
| 78 | 1.14 |
| 79 | 1.04 |
| 80 | 1.37 |
| 81 | 0.84 |
| 82 | 0.68 |
| 83 | 1.15 |
| 84 | 0.98 |
| 85 | 1.25 |
| 86 | 0.96 |
| 87 | 1.11 |
| 88 | 0.96 |
| 89 | 1.13 |
| 90 | 1.28 |
| 91 | 1.12 |
| 92 | 1.01 |
| 93 | 1.04 |
| 94 | 0.97 |
| 95 | 1.04 |

## Model Comparisons for Testing Interactions

### FramingXnorm interaction

log\_minus\_frameXnorm <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

* df\_residual = 1046 (1038 is df\_resid from full log model + 8 contrast codes for interaction)
* residual deviance = 1335
* residual deviance from full log model = 1329

anova(log\_mice, log\_minus\_frameXnorm)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.8449952 8 1019.428 1038 0.5630141 0.01996178

* Inclusion of framing X norm interaction does not account for significantly more variance in the model

### FramingXbiospheric interaction

log\_minus\_frameXbio <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXbio) # gives same results as D1() function

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 1.120094 10 1021.56 1038 0.3434005 0.02140184

### FramingXaltruistic interaction

log\_minus\_frameXalt <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXalt)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 1.812953 10 1027.933 1038 0.05427143 0.01584221

### FramingXegoistic interaction

log\_minus\_frameXego <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXego)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.9880822 10 993.6356 1038 0.4518364 0.03784017

### FramingXhedonic interaction

log\_minus\_frameXhed <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXhed)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.6694009 10 1007.285 1038 0.7535855 0.03070821

### FrameXingroup interaction

log\_minus\_frameXingroup <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXingroup)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.4021875 10 1025.916 1038 0.9459999 0.01777125

### NormXbiospheric interaction

log\_minus\_normXbio <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_normXbio)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.7786807 12 1022.439 1038 0.6730297 0.0231471

### NormXaltruistic interaction

log\_minus\_normXalt <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_normXalt)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 1.434038 12 1027.082 1038 0.1440866 0.01862995

### NormXegoistic interaction

log\_minus\_normXego <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_normXego)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.6145075 12 1004.892 1038 0.831254 0.03585711

### NormXhedonic interaction

log\_minus\_normXhed <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_normXhed)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.6435021 12 1016.983 1038 0.805812 0.02762277

### NormXingroup interaction

log\_minus\_normXingroup <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_normXingroup)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.4094259 12 1024.2 1038 0.960429 0.02153366

### FrameXnormXbiospheric interaction

log\_minus\_frameXnormXbio <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXnormXbio)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.7932525 8 1013.302 1038 0.6086539 0.02352689

### FrameXnormXaltruistic interaction

log\_minus\_frameXnormXalt <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXnormXalt)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 1.306876 8 1025.311 1038 0.2359755 0.01591024

### FrameXnormXegoistic interaction

log\_minus\_frameXnormXego <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXnormXego)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.6536117 8 966.9787 1038 0.7326292 0.04287712

### FrameXnormXhedonic interaction

log\_minus\_frameXnormXhed <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center + framing\_condition:norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXnormXhed)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.7193051 8 996.9336 1038 0.6746379 0.03138585

### FrameXnormXingroup interaction

log\_minus\_frameXnormXingroup <- with(mids\_obj, glm(consumer\_behaviors ~ framing\_condition + norm\_condition + biospheric\_center + altruistic\_center + egoistic\_center + hedonic\_center + ingroup\_center + self\_dec\_center + impress\_manag\_center + clothing\_center + Gender + Age\_center + framing\_condition:norm\_condition + framing\_condition:biospheric\_center + norm\_condition:biospheric\_center + framing\_condition:norm\_condition:biospheric\_center + framing\_condition:altruistic\_center + norm\_condition:altruistic\_center + framing\_condition:norm\_condition:altruistic\_center + framing\_condition:egoistic\_center + norm\_condition:egoistic\_center + framing\_condition:norm\_condition:egoistic\_center + framing\_condition:hedonic\_center + norm\_condition:hedonic\_center + framing\_condition:norm\_condition:hedonic\_center + framing\_condition:ingroup\_center + norm\_condition:ingroup\_center, family = "binomial"))

Full model results

anova(log\_mice, log\_minus\_frameXnormXingroup)

## test statistic df1 df2 dfcom p.value riv  
## 1 ~~ 2 0.4677494 8 1019.14 1038 0.8792719 0.0201414

# Simple Effects