### R Script to reproduce results in the 2022 CES Report

### Raw data for 2022 available at https://heterodoxacademy.org/campus-expression-survey

### This script reproduces all analyses for 2022 data. Data from prior years are available on our website at https://heterodoxacademy.org/campus-expression-survey

### Questions? Contact questions@heterodoxacademy.org

### Citation: Zhou, S. & Barbaro, N. (2023). Understanding Student Expression Across Higher Ed: Heterodox Academyâ€™s Annual Campus Expression Survey. Heterodox Academy.

## Data Import and Preparation ####

library(tidyverse)

ces2022 <- readr::read\_csv("CES\_F2022\_FinalDataPublic.csv")

# Convert variables to factor

ces2022$student\_interaction <- factor(ces2022$student\_interaction, ordered = T,

levels = c("Low","Medium","High"))

ces2022$Lonely <- factor(ces2022$Lonely, ordered = T,

levels = c("Hardly ever", "Some of the time", "Often"))

ces2022$noncontroversial\_dis <- factor(ces2022$noncontroversial\_dis, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$gender\_discuss <- factor(ces2022$gender\_discuss, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$politics\_discuss <- factor(ces2022$politics\_discuss, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$race\_discuss <- factor(ces2022$race\_discuss, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$religion\_discuss <- factor(ces2022$religion\_discuss, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$sexualorientation\_di <- factor(ces2022$sexualorientation\_di, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$covid\_discuss <- factor(ces2022$covid\_discuss, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$freespeech\_discuss <- factor(ces2022$freespeech\_discuss, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$abortion\_discuss <- factor(ces2022$abortion\_discuss, ordered = T,

levels = c("Very Comfortable", "Somewhat Comfortable", "Somewhat Reluctant", "Very Reluctant"))

ces2022$views\_encouraged <- factor(ces2022$views\_encouraged, ordered = T,

levels = c("Never", "Very rarely", "Rarely", "Occasionally", "Frequently", "Very frequently"))

ces2022$freeexpression\_campu <- factor(ces2022$freeexpression\_campu, ordered = T,

levels = c("Strongly disagree", "Somewhat disagree", "Somewhat agree", "Strongly agree"))

ces2022$yearinschool <- factor(ces2022$yearinschool, ordered = T,

levels = c("First year", "Sophomore", "Junior", "Senior", "Senior Plus"))

ces2022$familyses\_demo <- factor(ces2022$familyses\_demo, ordered = T,

levels = c("Less than $20,000", "$20,000 to $29,999", "$30,000 to $39,999", "$40,000 to $49,999",

"$50,000 to $74,999", "$75,000 to $99,999", "$100,000 to $149,999", "$150,000 to $199,999",

"$200,000 to $249,999", "$250,000 to $499,999", "$500,000 or more"))

## The Student Sample by the Numbers ####

# Public v. Private

ces2022 %>% group\_by(pub\_priv) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Region

ces2022 %>% group\_by(region) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Education Modality

ces2022 %>% group\_by(Online) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Trichotomized

temp <- ces2022 %>% filter(Online == "Fully in person" |

Online == "Primarily in person") %>% select(PID)

ces2022$online\_trich <- as.character(ces2022$Online)

ces2022[c(temp$PID), "online\_trich"] <- "In person"

temp <- ces2022 %>% filter(Online == "Fully online" |

Online == "Primarily online") %>% select(PID)

ces2022[c(temp$PID), "online\_trich"] <- "Online"

temp <- ces2022 %>% filter(Online == "Roughly equal portions of in-person and online classes") %>% select(PID)

ces2022[c(temp$PID), "online\_trich"] <- "Balanced"

temp <- ces2022 %>% filter(Online == "Other") %>% select(PID)

ces2022[c(temp$PID), "online\_trich"] <- NA

ces2022$online\_trich <- factor(ces2022$online\_trich, ordered = T,

levels = c("Online","Balanced", "In person"))

rm(temp)

ces2022 %>% group\_by(online\_trich) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Year in School

ces2022 %>% group\_by(yearinschool) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Combine Senior with Senior Plus

temp <- ces2022 %>% filter(yearinschool == "Senior" |

yearinschool == "Senior Plus") %>% select(PID)

ces2022$yearinschool <- as.character(ces2022$yearinschool)

ces2022[c(temp$PID), "yearinschool"] <- "Senior or more"

ces2022$yearinschool <- factor(ces2022$yearinschool, ordered = T,

labels = c("First year", "Sophomore", "Junior", "Senior or more"))

ces2022 %>% group\_by(yearinschool) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

rm(temp)

# Gender

ces2022 %>% group\_by(genderid\_demo) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Due to < 1% in "self-identify", we combined the two non-binary groups into "Other":

temp <- ces2022 %>% filter(genderid\_demo == "Other" | genderid\_demo == "Nonbinary") %>% select(PID)

ces2022[c(temp$PID), "genderid\_demo"] <- "Other"

ces2022 %>% group\_by(genderid\_demo) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

rm(temp)

# Sexual Orientation

ces2022 %>% group\_by(sexualorient\_demo) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Religion

ces2022 %>% group\_by(religion\_demo) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Race or Ethnicity

ces2022 %>% group\_by(race\_ethnicity\_demo) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Due to < 1% in "American Indian", "Native Hawaiian", and "Other", we combined the three groups into "Other":

temp <- ces2022 %>% filter(race\_ethnicity\_demo == "American Indian or Alaska Native" |

race\_ethnicity\_demo == "Native Hawaiian or Other Pacific Islander" |

race\_ethnicity\_demo == "Other") %>% select(PID)

ces2022[c(temp$PID), "race\_ethnicity\_demo"] <- "Other"

ces2022 %>% group\_by(race\_ethnicity\_demo) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

rm(temp)

# Political Party

ces2022 %>% group\_by(politicalparty\_demo) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Family SES

ces2022 %>% group\_by(familyses\_demo) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

## Takeaway 1 ####

# Dichotomize responses into Reluctant vs. Comfortable

ces2022$noncontroversial\_dich <- ces2022$noncontroversial\_dis

levels(ces2022$noncontroversial\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

ces2022$gender\_dich <- ces2022$gender\_discuss

levels(ces2022$gender\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

ces2022$politics\_dich <- ces2022$politics\_discuss

levels(ces2022$politics\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

ces2022$race\_dich <- ces2022$race\_discuss

levels(ces2022$race\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

ces2022$religion\_dich <- ces2022$religion\_discuss

levels(ces2022$religion\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

ces2022$sexuality\_dich <- ces2022$sexualorientation\_di

levels(ces2022$sexuality\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

ces2022$covid\_dich <- ces2022$covid\_discuss

levels(ces2022$covid\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

ces2022$freespeech\_dich <- ces2022$freespeech\_discuss

levels(ces2022$freespeech\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

ces2022$abortion\_dich <- ces2022$abortion\_discuss

levels(ces2022$abortion\_dich) <- c("Comfortable", "Comfortable", "Reluctant", "Reluctant")

# Compute Reluctance over any of the five controversial topics in general

1-sum(is.na(ces2022$consequences\_closed))/nrow(ces2022)

# Create table of proportions for percent reluctant across topics

tough\_topics <- rbind(

round(summary(ces2022$noncontroversial\_dich)/length(ces2022$noncontroversial\_dich),3),

round(summary(ces2022$gender\_dich)/length(ces2022$gender\_dich),3),

round(summary(ces2022$politics\_dich)/length(ces2022$politics\_dich),3),

round(summary(ces2022$race\_dich)/length(ces2022$race\_dich),3),

round(summary(ces2022$religion\_dich)/length(ces2022$religion\_dich),3),

round(summary(ces2022$sexuality\_dich)/length(ces2022$sexuality\_dich),3),

round(summary(ces2022$covid\_dich)/length(ces2022$covid\_dich),3),

round(summary(ces2022$freespeech\_dich)/length(ces2022$freespeech\_dich),3),

round(summary(ces2022$abortion\_dich)/length(ces2022$abortion\_dich),3)

)

tough\_topics <- as.data.frame(tough\_topics)

tough\_topics$topic <- c("noncontroversial", "gender", "politics", "race", "religion", "sexual orientation", "covid", "free speech", "abortion")

tough\_topics <- select(tough\_topics, topic, Reluctant)

names(tough\_topics)[2] <- "2022 % Reluctant"

tough\_topics

# Setup test of demographics X reluctance to discuss tough topics

test\_results <- data.frame("demographic" = c("pub\_priv", "region", "online\_trich", "student\_interaction",

"yearinschool", "genderid\_demo", "race\_ethnicity\_demo", "politicalparty\_demo",

"religion\_demo", "sexualorient\_demo", "familyses\_demo"),

"noncontroversial" = NA, "gender" = NA, "politics"= NA, "race" = NA, "religion" = NA,

"sexual\_orientation" = NA)

# Fisher's exact tests between demographic groups and dichotomized "reluctance to discuss" variables

x <- c("pub\_priv", "region", "online\_trich", "student\_interaction",

"yearinschool", "genderid\_demo", "race\_ethnicity\_demo", "politicalparty\_demo",

"religion\_demo", "sexualorient\_demo", "familyses\_demo")

y <- c("noncontroversial\_dich", "gender\_dich", "politics\_dich", "race\_dich", "religion\_dich", "sexuality\_dich")

for (i in 1:length(x)) {

for (j in 1:length(y)) {

temp <- fisher.test(table(as.matrix(ces2022[,x[i]]), as.matrix(ces2022[,y[j]])), simulate.p.value = T)

if (temp$p.value < 0.05) {

test\_results[i,j+1] <- paste0("p = ", round(temp$p.value,3))

} else {

test\_results[i,j+1] <- paste0("")

}

}

}

rm(i, j, x, y, temp)

test\_results

# Significant result #1: political orientation X reluctance

y <- c("noncontroversial\_dich", "gender\_dich", "politics\_dich", "race\_dich", "religion\_dich", "sexuality\_dich")

result1 <- data.frame("political\_party" = names(table(ces2022$politicalparty\_demo)),

"noncontroversial" = NA, "gender" = NA, "politics"= NA, "race" = NA, "religion" = NA, "sexual\_orientation" = NA)

for (i in 1:length(y)) {

temp <- table(as.matrix(ces2022[,"politicalparty\_demo"]), as.matrix(ces2022[,y[i]]))

temp <- as.data.frame.matrix(temp)

temp <- mutate(temp, "perc\_reluctant" = Reluctant / (Comfortable + Reluctant))

temp <- round(temp, 2)[,3]

result1[,i+1] <- temp

}

rm(y, temp)

result1

# Significant result #2: race/ethnicity X reluctance

y <- c("noncontroversial\_dich", "gender\_dich", "politics\_dich", "race\_dich", "religion\_dich", "sexuality\_dich")

result2 <- data.frame("race\_ethnicity" = names(table(ces2022$race\_ethnicity\_demo)),

"noncontroversial" = NA, "gender" = NA, "politics"= NA, "race" = NA, "religion" = NA, "sexual\_orientation" = NA)

for (i in 1:length(y)) {

temp <- table(as.matrix(ces2022[,"race\_ethnicity\_demo"]), as.matrix(ces2022[,y[i]]))

temp <- as.data.frame.matrix(temp)

temp <- mutate(temp, "perc\_reluctant" = Reluctant / (Comfortable + Reluctant))

temp <- round(temp, 2)[,3]

result2[,i+1] <- temp

}

rm(y, temp)

result2

# Significant result #3: gender X reluctance to discuss abortion

result3 <- data.frame("gender" = names(table(ces2022$genderid\_demo)),

"abortion" = NA)

temp <- table(as.matrix(ces2022[,"genderid\_demo"]), as.matrix(ces2022[,"abortion\_dich"]))

temp <- as.data.frame.matrix(temp)

temp <- mutate(temp, "perc\_reluctant" = Reluctant / (Comfortable + Reluctant))

temp <- round(temp, 2)[,3]

result3[,2] <- temp

rm(temp)

result3

## Takeaway 2 ####

# Qualitative coding of open-ended comments available upon request

# Out of 915 students who expressed some level of reluctance, and thus answered the "consequences" question

consequences\_results <- data.frame("consequence" = c("Other students would criticize my views as offensive.",

"Other students would make critical comments about me with other people after class.",

"The professor would say my views are wrong.",

"The professor would criticize my views as offensive.",

"The professor would give me a lower grade because of my views.",

"Someone would post critical comments about my views on social media.",

"Someone would file a complaint claiming my views violated a campus harassment policy.",

"I would cause others psychological harm.",

"Other concerns of consequences? Please list below."),

"n" = NA)

x <- consequences\_results$consequence

for (i in 1:length(x)){

consequences\_results[i,2] <- sum(grepl(x[i], ces2022$consequences\_closed, fixed = TRUE))

}

rm(i, x)

consequences\_results <- mutate(consequences\_results, "prop" = n/915) %>% arrange(desc(prop))

consequences\_results

# Out of all 1564 students who answered the "consequences\_own" question:

consequences\_own\_results <- data.frame("consequence\_own" = c("I would speak out to criticize that classmate as being offensive during that discussion.",

"I would not say anything during class but I would make critical comments about it with other people afterwards.",

"I would post critical comments about his or her views on social media (anonymously or not).",

"I would file a harassment complaint or code of conduct violation.",

"I would not say or do anything about it but I would think badly of that student.",

"I would ask questions about their opinion so I can understand it better.",

"Other actions you might take? Please list below."),

"n" = NA)

x <- consequences\_own\_results$consequence\_own

for (i in 1:length(x)){

consequences\_own\_results[i,2] <- sum(grepl(x[i], ces2022$OwnConsequences\_clos, fixed = TRUE))

}

rm(i, x)

consequences\_own\_results <- mutate(consequences\_own\_results, "prop" = n/1564) %>% arrange(desc(prop))

consequences\_own\_results

## Takeaway 3 ####

# 2022 Education Modality

ces2022 %>% group\_by(online\_trich) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# 2022Student Interaction

ces2022 %>% group\_by(student\_interaction) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# 2022 Loneliness

ces2022 %>% group\_by(Lonely) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Significant result #4 from Fisher's exact test (see Takeaway #1 code): student interaction X reluctance

y <- c("noncontroversial\_dich", "gender\_dich", "politics\_dich", "race\_dich", "religion\_dich", "sexuality\_dich")

result4 <- data.frame("student\_interaction" = c("High", "Low", "Medium"),

"noncontroversial" = NA, "gender" = NA, "politics"= NA, "race" = NA, "religion" = NA, "sexual\_orientation" = NA)

for (i in 1:length(y)) {

temp <- table(as.matrix(ces2022[,"student\_interaction"]), as.matrix(ces2022[,y[i]]))

temp <- as.data.frame.matrix(temp)

temp <- mutate(temp, "perc\_reluctant" = Reluctant / (Comfortable + Reluctant))

temp <- round(temp, 2)[,3]

result4[,i+1] <- temp

}

rm(y, temp)

result4

# Relationship between modality of learning and student interaction (significant)

fisher.test(table(as.matrix(ces2022$online\_trich), as.matrix(ces2022$student\_interaction)), simulate.p.value = T)

# Interaction between modality of learning and self-censorship (not significant)

fisher.test(table(as.matrix(ces2022$online\_trich), as.matrix(ces2022$gender\_dich)), simulate.p.value = T)

fisher.test(table(as.matrix(ces2022$online\_trich), as.matrix(ces2022$politics\_dich)), simulate.p.value = T)

fisher.test(table(as.matrix(ces2022$online\_trich), as.matrix(ces2022$race\_dich)), simulate.p.value = T)

fisher.test(table(as.matrix(ces2022$online\_trich), as.matrix(ces2022$religion\_dich)), simulate.p.value = T)

fisher.test(table(as.matrix(ces2022$online\_trich), as.matrix(ces2022$sexuality\_dich)), simulate.p.value = T)

## Takeaway 4 ####

# Feeling like views are encouraged

ces2022 %>% group\_by(views\_encouraged) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

# Free expression on campus

ces2022 %>% group\_by(freeexpression\_campu) %>% summarize("n" = n()) %>% mutate("prop" = n / sum(n))

## Crosstabs - write to Clipboard to paste into crosstab appendix ####

# All demographic headers

table(ces2022$genderid\_demo)

table(ces2022$race\_ethnicity\_demo)

table(ces2022$politicalparty\_demo)

table(ces2022$religion\_demo)

table(ces2022$sexualorient\_demo)

table(ces2022$familyses\_demo)

table(ces2022$pub\_priv)

table(ces2022$region)

table(ces2022$yearinschool)

table(ces2022$online\_trich)

table(ces2022$student\_interaction)

# Totals

write.table(as.vector(table(ces2022$politics\_discuss)/1564), "clipboard", row.names = F, col.names = F)

write.table(as.vector(table(ces2022$race\_discuss)/1564), "clipboard", row.names = F, col.names = F)

write.table(as.vector(table(ces2022$religion\_discuss)/1564), "clipboard", row.names = F, col.names = F)

write.table(as.vector(table(ces2022$sexualorientation\_di)/1564), "clipboard", row.names = F, col.names = F)

write.table(as.vector(table(ces2022$gender\_discuss)/1564), "clipboard", row.names = F, col.names = F)

write.table(as.vector(table(ces2022$noncontroversial\_dis)/1564), "clipboard", row.names = F, col.names = F)

# By Demographic - Politics

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$genderid\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$race\_ethnicity\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$politicalparty\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$religion\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$sexualorient\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$familyses\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$pub\_priv), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$region), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$yearinschool), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$online\_trich), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$politics\_discuss, ces2022$student\_interaction), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

# By Demographic - Race

write.table(prop.table(table(ces2022$race\_discuss, ces2022$genderid\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$race\_ethnicity\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$politicalparty\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$religion\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$sexualorient\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$familyses\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$pub\_priv), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$region), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$yearinschool), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$online\_trich), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$race\_discuss, ces2022$student\_interaction), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

# By Demographic - Religion

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$genderid\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$race\_ethnicity\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$politicalparty\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$religion\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$sexualorient\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$familyses\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$pub\_priv), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$region), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$yearinschool), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$online\_trich), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$religion\_discuss, ces2022$student\_interaction), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

# By Demographic - Sexual Orientation

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$genderid\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$race\_ethnicity\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$politicalparty\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$religion\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$sexualorient\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$familyses\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$pub\_priv), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$region), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$yearinschool), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$online\_trich), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$sexualorientation\_di, ces2022$student\_interaction), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

# By Demographic - Gender

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$genderid\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$race\_ethnicity\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$politicalparty\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$religion\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$sexualorient\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$familyses\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$pub\_priv), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$region), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$yearinschool), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$online\_trich), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$gender\_discuss, ces2022$student\_interaction), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

# By Demographic - Noncontroversial

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$genderid\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$race\_ethnicity\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$politicalparty\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$religion\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$sexualorient\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$familyses\_demo), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$pub\_priv), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$region), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$yearinschool), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$online\_trich), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)

write.table(prop.table(table(ces2022$noncontroversial\_dis, ces2022$student\_interaction), margin = 2), "clipboard", sep = "\t", row.names = F, col.names = F)