Player Level Tantalus Analysis

```
setwd("C:/Users/jletchf/git/tantalus-data-analysis/code/Analysis")
options(rstudio.help.showDataPreview = FALSE)
data <- read.csv("playerData.csv")
x = data$threats_made
threats_made_norm = (x-min(x))/(max(x)-min(x))
x = data$revises
revises_norm = (x-min(x))/(max(x)-min(x))
x = data$revises/data$revises_opp

is.nan.data.frame <- function(x)
do.call(cbind, lapply(x, is.nan))
x[is.nan(x)] <- 1
data$frac_revises = x
frac_revises_norm = (x-min(x))/(max(x)-min(x))
Domain = NA
Specificity = NA
Domain_to_deter = NA
```

```
C1_C2 = data[data$condition_domain == 3 & data$condition_domain_threatened == 1,]
C3_C4 = data[data$condition_domain == 1 & data$condition_domain_threatened == 1,]
data2 <- data.frame(revises_norm,Domain,Specificity,Domain_to_deter)
data2$Domain <- NA
data2$threats_made <-  data$threats_made
data2$frac_revises <- data$frac_revises
data2$Age <- data$Age
data2$Gender <- data$Gender
data2$Education <- data$Education
data2$PoliticsRating <- data$PoliticsRating
data2$DeterrencePreference <- data$DeterencePreference
data2$Occupation <- data$Occupation
data2$GeopoliticalConflictKnowledge <- data$GeopoliticalConflictKnowledge
data2$CyberDeterrenceKnowledge <- data$CyberDeterenceKnowledge
data2$StrategyGamesRating <- data$StrategyGamesRating
data2$OnlineStrategyGamesRating <- data$OnlineStrategyGamesRating
data2[data$condition_domain == 3 & data$condition_domain_threatened == 1,]$Domain <- 0
data2[data$condition_domain == 1 & data$condition_domain_threatened == 1,]$Domain <- 1
data3 <- subset(data2,(!is.na(data2$Domain)))
```

```
t.test(C1_C2$threats_made,C3_C4$threats_made)
```

```
##
##  Welch Two Sample t-test
##
## data:  C1_C2$threats_made and C3_C4$threats_made
## t = 1.0135, df = 680.29, p-value = 0.3112
```

```
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.2129461  0.6673540
## sample estimates:
## mean of x mean of y
##  4.043228  3.816024
```

```
myLm.1 <- glm(threats_made ~ Domain,family = "poisson",data = data3)

myLm.2 <- lm(frac_revises ~ Domain,data = data3)


myLm.3 <- glm(threats_made ~ Domain + Age + Gender + Education + PoliticsRating + DeterrencePreference

myLm.4 <- lm(frac_revises ~ Domain + Age + Gender + Education + PoliticsRating + DeterrencePreference +
```

```
C1_C3 = data[data$condition_specific == 1 & data$condition_domain_threatened == 1,]
C2_C4 = data[data$condition_specific == 0 & data$condition_domain_threatened == 1,]
data2$Specificity <- NA
data2[data$condition_specific == 0 & data$condition_domain_threatened == 1,]$Specificity <- 0
data2[data$condition_specific == 1 & data$condition_domain_threatened == 1,]$Specificity <- 1
data3 <- subset(data2,(!is.na(data2$Specificity)))
```

```
myLm.5 <- glm(threats_made ~ Specificity,family = "poisson",data = data3)

myLm.6 <- lm(frac_revises ~ Specificity,data = data3)


myLm.7 <- glm(threats_made ~ Specificity + Age + Gender + Education + PoliticsRating + DeterrencePrefere

myLm.8 <- lm(frac_revises ~ Specificity + Age + Gender + Education + PoliticsRating + DeterrencePrefere
```

```
C2_C4 = data[data$condition_specific == 0 & data$condition_domain_threatened == 1,]
C8_C10 = data[data$condition_specific == 0 & data$condition_domain_threatened == 2,]
data2$Domain_to_deter <- NA
data2[data$condition_specific == 0 & data$condition_domain_threatened == 1,]$Domain_to_deter <- 0
data2[data$condition_specific == 0 & data$condition_domain_threatened == 2,]$Domain_to_deter <- 1
data3 <- subset(data2,(!is.na(data2$Domain_to_deter)))
```

```
myLm.9 <- glm(threats_made ~ Domain_to_deter,family = "poisson",data = data3)

myLm.10 <- lm(frac_revises ~ Domain_to_deter,data = data3)


myLm.11 <- glm(threats_made ~ Domain_to_deter + Age + Gender + Education + PoliticsRating + DeterrenceP

myLm.12 <- lm(frac_revises ~ Domain_to_deter + Age + Gender + Education + PoliticsRating + DeterrencePr
```

% Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.com % Date and time: Wed, Sep 24, 2025 - 5:03:16 PM % Requires LaTeX packages: dcolumn

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Table 1: Poisson regression models measuring the number of threats as the domain of the threat and the specificity of the threat vary using the player as the unit of analysis. The values in the table body display the regression coefficients with standard errors in parentheses.

	Dependent variable:			
	threats_made			
	(1)	(2)	(3)	(4)
Domain	−0.058	−0.049		
	(0.039)	(0.039)		
Specificity			0.045	0.037
			(0.039)	(0.039)
Age		−0.060		−0.061
		(0.041)		(0.041)
Gender		-0.118^{***}		-0.119^{***}
		(0.042)		(0.042)
Education		0.054		0.053
		(0.042)		(0.042)
PoliticsRating		0.029		0.028
		(0.040)		(0.040)
DeterrencePreference		0.176^{***}		0.177^{***}
		(0.044)		(0.044)
GeopoliticalConflictKnowledge		0.024		0.026
		(0.049)		(0.049)
CyberDeterrenceKnowledge		−0.016		−0.021
		(0.056)		(0.056)
StrategyGamesRating		−0.028		−0.029
		(0.046)		(0.046)
OnlineStrategyGamesRating		−0.039		−0.035
		(0.048)		(0.048)
Constant	1.397^{***}	1.441^{***}	1.346^{***}	1.397^{***}
	(0.027)	(0.057)	(0.028)	(0.059)
Observations	684	684	684	684
Log Likelihood	-1,816.074	-1,802.139	-1,816.501	-1,802.487
Akaike Inf. Crit.	3,636.147	3,626.277	3,637.003	3,626.974
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 2: Linear regression models measuring the likelihood of revision as the domain of the threat and the specificity of the threat vary using the player as the unit of analysis. The values in the table body display the regression coefficients with standard errors in parentheses.

	Dependent variable:			
	frac_revises			
	(5)	(6)	(7)	(8)
Domain	-0.127^{***}	-0.131^{***}		
	(0.034)	(0.034)		
Specificity			-0.037	-0.033
			(0.035)	(0.035)
Age		-0.069^{*}		-0.068^{*}
		(0.036)		(0.036)
Gender		0.034		0.021
		(0.038)		(0.038)
Education		-0.077^{**}		-0.078^{**}
		(0.037)		(0.037)
PoliticsRating		-0.065^{*}		-0.068^{*}
		(0.035)		(0.036)
DeterrencePreference		-0.034		-0.028
		(0.041)		(0.041)
GeopoliticalConflictKnowledge		0.062		0.055
		(0.043)		(0.044)
CyberDeterrenceKnowledge		0.013		0.017
		(0.049)		(0.050)
StrategyGamesRating		0.031		0.023
		(0.041)		(0.041)
OnlineStrategyGamesRating		-0.028		-0.013
		(0.043)		(0.043)
Constant	0.603^{***}	0.676^{***}	0.559^{***}	0.635^{***}
	(0.024)	(0.051)	(0.024)	(0.053)
Observations	684	684	684	684
R^2	0.020	0.045	0.002	0.026
Adjusted R^2	0.018	0.031	0.0002	0.011
Residual Std. Error	0.448 (df = 682)	0.445 (df = 673)	0.452 (df = 682)	0.449 (df = 673)
F Statistic	13.685^{***} (df = 1; 682)	3.189^{***} (df = 10; 673)	1.168 (df = 1; 682)	1.786^{*} (df = 10; 673)
Note:				*p<0.1; **p<0.05; ***p<0.01

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```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by condition
## Kruskal-Wallis chi-squared = 3.5473, df = 5, p-value = 0.6162

##                      Df Sum Sq Mean Sq F value Pr(>F)
## factor(condition)     5   1.95  0.3905   1.828  0.105
## Residuals          1084 231.62  0.2137

##
##  Kruskal-Wallis rank sum test
##
## data:  Education by condition
## Kruskal-Wallis chi-squared = 2.2733, df = 5, p-value = 0.8102

##
##  Kruskal-Wallis rank sum test
##
## data:  PoliticsRating by condition
## Kruskal-Wallis chi-squared = 1.8517, df = 5, p-value = 0.8693

##
##  Kruskal-Wallis rank sum test
##
## data:  DeterencePreference by condition
## Kruskal-Wallis chi-squared = 3.1764, df = 5, p-value = 0.6728

##
##  Kruskal-Wallis rank sum test
##
## data:  GeopoliticalConflictKnowledge by condition
## Kruskal-Wallis chi-squared = 2.9685, df = 5, p-value = 0.7048

##
##  Kruskal-Wallis rank sum test
##
## data:  CyberDeterenceKnowledge by condition
## Kruskal-Wallis chi-squared = 6.8821, df = 5, p-value = 0.2296

##
##  Kruskal-Wallis rank sum test
##
## data:  StrategyGamesRating by condition
## Kruskal-Wallis chi-squared = 2.3481, df = 5, p-value = 0.7992

##
##  Kruskal-Wallis rank sum test
##
## data:  OnlineStrategyGamesRating by condition
## Kruskal-Wallis chi-squared = 3.3237, df = 5, p-value = 0.6502
```

Table 3: Poisson and linear regression models measuring number of threats and the likelihood of revision as the domain that the players are attempting to deter varies using the player as the unit of analysis. The values in the table body display the regression coefficients with standard errors in parentheses.

	Dependent variable:			
	threats_made		frac_revises	
	Poisson		*OLS*	
	(9)	(10)	(11)	(12)
Domain_to_deter	0.104***	0.098***	−0.023	−0.022
	(0.037)	(0.037)	(0.033)	(0.033)
Age		0.038		−0.045
		(0.037)		(0.034)
Gender		−0.113***		0.011
		(0.040)		(0.037)
Education		−0.008		−0.093***
		(0.039)		(0.036)
PoliticsRating		0.005		−0.037
		(0.037)		(0.034)
DeterrencePreference		0.144***		0.021
		(0.043)		(0.040)
GeopoliticalConflictKnowledge		0.008		0.011
		(0.046)		(0.042)
CyberDeterrenceKnowledge		−0.070		0.071
		(0.055)		(0.049)
StrategyGamesRating		−0.140***		−0.027
		(0.043)		(0.039)
OnlineStrategyGamesRating		0.105**		−0.043
		(0.045)		(0.040)
Constant	1.346***	1.401***	0.559***	0.667***
	(0.028)	(0.057)	(0.024)	(0.052)
Observations	747	747	747	747
R^2			0.001	0.023
Adjusted R^2			-0.001	0.009
Log Likelihood	-2,012.575	-1,994.849		
Akaike Inf. Crit.	4,029.151	4,011.697		
Residual Std. Error			0.452 (df = 745)	0.450 (df = 736)
F Statistic			0.495 (df = 1; 745)	1.699* (df = 10; 736)
Note:				*p<0.1; **p<0.05; ***p<0.01