

HW15

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Set Working Directories & Reading Files

```
library(seminr)
library(DiagrammerR)
setwd("/Users/olivia/Documents/Documents/Study/Semester 6/BACS/HW15")
security <- read.csv("security_data_sem.csv")
```

QUESTION 1

A) Create a PLS path model using SEMinR, with all the following characteristics:

I) Measurement model – all constructs are measured as composites:

```
security_mm <- constructs(
  composite("REP", multi_items("PREP", 1:4)),
  composite("INV", multi_items("PINV", 1:3)),
  composite("SEC", multi_items("PSEC", 1:4)),
  composite("TRUST", multi_items("TRST", 1:4)),
  composite("POL", multi_items("PPSS", 1:3)),
  composite("FAML", single_item("FAML1")),
  interaction_term(iv = 'REP', moderator = 'POL', method = orthogonal)
)
```

II) Structural Model – paths between constructs as shown in this causal model:

```
security_sm <- relationships(
  paths(from = c("REP", "INV", "POL", "FAML", "REP*POL"), to = "SEC"),
  paths(from = "SEC", to = "TRUST")
)
```

B) Show us the following results in table or figure formats:

I) Plot a figure of the estimated model

```
security_pls <- estimate_pls(data = security,
                             measurement_model = security_mm,
                             structural_model = security_sm)
sec_report<-summary(security_pls)
```

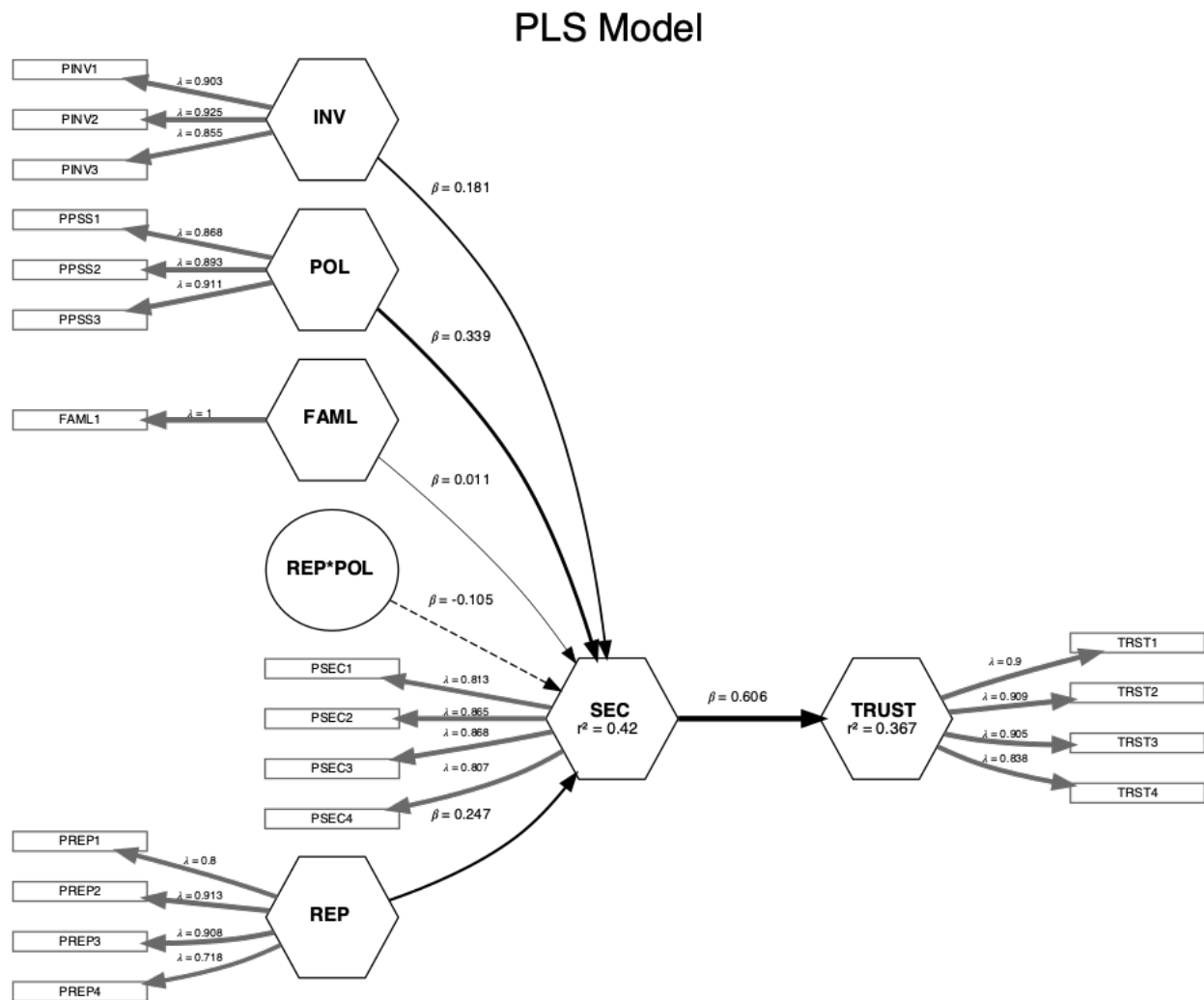


Figure 1: PLS Model

II) Weights and loadings of composites

```
sec_report$weights
```

##		REP	INV	POL	FAML	REP*POL	SEC	TRUST
##	PREP1	0.215	0.000	0.000	0.000	0.000	0.000	0.000
##	PREP2	0.334	0.000	0.000	0.000	0.000	0.000	0.000

```

## PREP3      0.349 0.000 0.000 0.000    0.000 0.000 0.000
## PREP4      0.287 0.000 0.000 0.000    0.000 0.000 0.000
## PINV1      0.000 0.363 0.000 0.000    0.000 0.000 0.000
## PINV2      0.000 0.395 0.000 0.000    0.000 0.000 0.000
## PINV3      0.000 0.358 0.000 0.000    0.000 0.000 0.000
## PSEC1      0.000 0.000 0.000 0.000    0.000 0.277 0.000
## PSEC2      0.000 0.000 0.000 0.000    0.000 0.315 0.000
## PSEC3      0.000 0.000 0.000 0.000    0.000 0.307 0.000
## PSEC4      0.000 0.000 0.000 0.000    0.000 0.292 0.000
## TRST1      0.000 0.000 0.000 0.000    0.000 0.000 0.282
## TRST2      0.000 0.000 0.000 0.000    0.000 0.000 0.280
## TRST3      0.000 0.000 0.000 0.000    0.000 0.000 0.286
## TRST4      0.000 0.000 0.000 0.000    0.000 0.000 0.278
## PPSS1      0.000 0.000 0.360 0.000    0.000 0.000 0.000
## PPSS2      0.000 0.000 0.395 0.000    0.000 0.000 0.000
## PPSS3      0.000 0.000 0.367 0.000    0.000 0.000 0.000
## FAML1      0.000 0.000 0.000 1.000    0.000 0.000 0.000
## PREP1*PPSS1 0.000 0.000 0.000 0.000    0.239 0.000 0.000
## PREP1*PPSS2 0.000 0.000 0.000 0.000    0.031 0.000 0.000
## PREP1*PPSS3 0.000 0.000 0.000 0.000    0.021 0.000 0.000
## PREP2*PPSS1 0.000 0.000 0.000 0.000    0.046 0.000 0.000
## PREP2*PPSS2 0.000 0.000 0.000 0.000   -0.104 0.000 0.000
## PREP2*PPSS3 0.000 0.000 0.000 0.000   -0.228 0.000 0.000
## PREP3*PPSS1 0.000 0.000 0.000 0.000   -0.341 0.000 0.000
## PREP3*PPSS2 0.000 0.000 0.000 0.000    0.095 0.000 0.000
## PREP3*PPSS3 0.000 0.000 0.000 0.000    0.108 0.000 0.000
## PREP4*PPSS1 0.000 0.000 0.000 0.000    0.443 0.000 0.000
## PREP4*PPSS2 0.000 0.000 0.000 0.000    0.382 0.000 0.000
## PREP4*PPSS3 0.000 0.000 0.000 0.000    0.271 0.000 0.000

```

```
sec_report$loadings
```

```

##      REP    INV    POL    FAML REP*POL    SEC  TRUST
## PREP1    0.800  0.000  0.000  0.000   0.000  0.000  0.000
## PREP2    0.913  0.000  0.000  0.000   0.000  0.000  0.000
## PREP3    0.908  0.000  0.000  0.000   0.000  0.000  0.000
## PREP4    0.718  0.000  0.000  0.000   0.000  0.000  0.000
## PINV1    0.000  0.903  0.000  0.000  -0.000  0.000  0.000
## PINV2    0.000  0.925  0.000  0.000  -0.000  0.000  0.000
## PINV3    0.000  0.855  0.000  0.000  -0.000  0.000  0.000
## PSEC1    0.000  0.000  0.000  0.000  -0.000  0.813  0.000
## PSEC2    0.000  0.000  0.000  0.000  -0.000  0.865  0.000
## PSEC3    0.000  0.000  0.000  0.000  -0.000  0.868  0.000
## PSEC4    0.000  0.000  0.000  0.000  -0.000  0.807  0.000

```

```
## TRST1      0.000  0.000  0.000  0.000 -0.000  0.000  0.900
## TRST2      0.000  0.000  0.000  0.000 -0.000  0.000  0.909
## TRST3      0.000  0.000  0.000  0.000 -0.000  0.000  0.905
## TRST4      0.000  0.000  0.000  0.000 -0.000  0.000  0.838
## PPSS1      0.000  0.000  0.868  0.000  0.000  0.000  0.000
## PPSS2      0.000  0.000  0.893  0.000  0.000  0.000  0.000
## PPSS3      0.000  0.000  0.911  0.000  0.000  0.000  0.000
## FAML1      0.000  0.000  0.000  1.000 -0.000  0.000  0.000
## PREP1*PPSS1 -0.000 -0.000 -0.000 -0.000  0.581 -0.000 -0.000
## PREP1*PPSS2 -0.000 -0.000  0.000 -0.000  0.510 -0.000 -0.000
## PREP1*PPSS3 -0.000 -0.000 -0.000 -0.000  0.506 -0.000 -0.000
## PREP2*PPSS1 -0.000 -0.000 -0.000 -0.000  0.509 -0.000 -0.000
## PREP2*PPSS2 -0.000 -0.000  0.000 -0.000  0.421  0.000  0.000
## PREP2*PPSS3 -0.000 -0.000 -0.000  0.000  0.336  0.000  0.000
## PREP3*PPSS1 -0.000 -0.000 -0.000  0.000  0.236  0.000  0.000
## PREP3*PPSS2 -0.000 -0.000  0.000 -0.000  0.555 -0.000 -0.000
## PREP3*PPSS3 -0.000 -0.000 -0.000  0.000  0.466 -0.000 -0.000
## PREP4*PPSS1  0.000 -0.000  0.000  0.000  0.900 -0.000 -0.000
## PREP4*PPSS2 -0.000 -0.000 -0.000 -0.000  0.836 -0.000  0.000
## PREP4*PPSS3  0.000 -0.000  0.000  0.000  0.859 -0.000  0.000
```

III) Regression coefficients of paths between factors

```
sec_report$paths
```

```
##          SEC TRUST
## R^2      0.420 0.367
## AdjR^2   0.412 0.365
## REP      0.247   .
## INV      0.181   .
## POL      0.339   .
## FAML      0.011   .
## REP*POL  -0.105   .
## SEC      . 0.606
```

IV) Bootstrapped path coefficients: t-values, 95% CI

```
boot_pls <- bootstrap_model(security_pls, nboot = 1000)
summary(boot_pls)
```

```
##
## Results from Bootstrap resamples: 1000
##
## Bootstrapped Structural Paths:
##          Original Est. Bootstrap Mean Bootstrap SD T Stat. 2.5% CI
```

```

## REP  -> SEC          0.247          0.243          0.057   4.297   0.125
## INV  -> SEC          0.181          0.185          0.057   3.165   0.075
## POL  -> SEC          0.339          0.340          0.055   6.211   0.236
## FAML -> SEC          0.011          0.012          0.057   0.184  -0.104
## REP*POL -> SEC      -0.105         -0.023          0.122  -0.858  -0.193
## SEC  -> TRUST        0.606          0.608          0.036  16.722   0.534
##
##                               97.5% CI
## REP  -> SEC          0.351
## INV  -> SEC          0.294
## POL  -> SEC          0.450
## FAML -> SEC          0.126
## REP*POL -> SEC      0.188
## SEC  -> TRUST        0.673
##
## Bootstrapped Weights:
##                               Original Est. Bootstrap Mean Bootstrap SD T Stat.
## PREP1 -> REP          0.215          0.214          0.026   8.234
## PREP2 -> REP          0.334          0.334          0.018  18.371
## PREP3 -> REP          0.349          0.349          0.021  16.586
## PREP4 -> REP          0.287          0.287          0.025  11.575
## PINV1 -> INV          0.363          0.363          0.025  14.551
## PINV2 -> INV          0.395          0.395          0.026  15.246
## PINV3 -> INV          0.358          0.357          0.026  13.869
## PSEC1 -> SEC          0.277          0.277          0.015  18.409
## PSEC2 -> SEC          0.315          0.314          0.017  18.172
## PSEC3 -> SEC          0.307          0.307          0.016  19.128
## PSEC4 -> SEC          0.292          0.292          0.018  15.961
## TRST1 -> TRUST        0.282          0.282          0.014  19.969
## TRST2 -> TRUST        0.280          0.279          0.015  19.174
## TRST3 -> TRUST        0.286          0.285          0.016  17.549
## TRST4 -> TRUST        0.278          0.279          0.021  13.196
## PPSS1 -> POL          0.360          0.360          0.022  16.131
## PPSS2 -> POL          0.395          0.395          0.022  17.710
## PPSS3 -> POL          0.367          0.367          0.019  19.254
## FAML1 -> FAML         1.000          1.000          0.000   .
## PREP1*PPSS1 -> REP*POL 0.239          0.100          0.148   1.617
## PREP1*PPSS2 -> REP*POL 0.031          0.069          0.088   0.354
## PREP1*PPSS3 -> REP*POL 0.021          0.068          0.108   0.197
## PREP2*PPSS1 -> REP*POL 0.046          0.085          0.102   0.449
## PREP2*PPSS2 -> REP*POL -0.104          0.048          0.149  -0.702
## PREP2*PPSS3 -> REP*POL -0.228          0.041          0.232  -0.983
## PREP3*PPSS1 -> REP*POL -0.341          0.004          0.301  -1.131
## PREP3*PPSS2 -> REP*POL 0.095          0.085          0.131   0.724

```

```

## PREP3*PPSS3 -> REP*POL          0.108          0.094          0.131    0.827
## PREP4*PPSS1 -> REP*POL          0.443          0.125          0.281    1.579
## PREP4*PPSS2 -> REP*POL          0.382          0.106          0.264    1.450
## PREP4*PPSS3 -> REP*POL          0.271          0.104          0.181    1.502
##                                     2.5% CI 97.5% CI
## PREP1 -> REP                    0.161    0.262
## PREP2 -> REP                    0.301    0.371
## PREP3 -> REP                    0.309    0.391
## PREP4 -> REP                    0.241    0.339
## PINV1 -> INV                    0.313    0.410
## PINV2 -> INV                    0.346    0.450
## PINV3 -> INV                    0.310    0.413
## PSEC1 -> SEC                    0.249    0.306
## PSEC2 -> SEC                    0.283    0.351
## PSEC3 -> SEC                    0.277    0.341
## PSEC4 -> SEC                    0.260    0.327
## TRST1 -> TRUST                  0.256    0.312
## TRST2 -> TRUST                  0.251    0.306
## TRST3 -> TRUST                  0.254    0.317
## TRST4 -> TRUST                  0.242    0.325
## PPSS1 -> POL                    0.313    0.402
## PPSS2 -> POL                    0.355    0.443
## PPSS3 -> POL                    0.332    0.405
## FAML1 -> FAML                   1.000    1.000
## PREP1*PPSS1 -> REP*POL -0.246    0.351
## PREP1*PPSS2 -> REP*POL -0.148    0.246
## PREP1*PPSS3 -> REP*POL -0.204    0.254
## PREP2*PPSS1 -> REP*POL -0.154    0.284
## PREP2*PPSS2 -> REP*POL -0.274    0.339
## PREP2*PPSS3 -> REP*POL -0.400    0.455
## PREP3*PPSS1 -> REP*POL -0.586    0.627
## PREP3*PPSS2 -> REP*POL -0.222    0.317
## PREP3*PPSS3 -> REP*POL -0.224    0.304
## PREP4*PPSS1 -> REP*POL -0.464    0.550
## PREP4*PPSS2 -> REP*POL -0.433    0.547
## PREP4*PPSS3 -> REP*POL -0.285    0.413
##
## Bootstrapped Loadings:
##                                     Original Est. Bootstrap Mean Bootstrap SD T Stat.
## PREP1 -> REP                    0.800          0.798          0.038  20.871
## PREP2 -> REP                    0.913          0.913          0.016  58.351
## PREP3 -> REP                    0.908          0.909          0.019  46.956
## PREP4 -> REP                    0.718          0.719          0.032  22.500

```

##	PINV1	->	INV	0.903	0.904	0.024	37.214
##	PINV2	->	INV	0.925	0.926	0.021	44.720
##	PINV3	->	INV	0.855	0.854	0.026	32.295
##	PSEC1	->	SEC	0.813	0.814	0.027	30.218
##	PSEC2	->	SEC	0.865	0.865	0.024	35.327
##	PSEC3	->	SEC	0.868	0.867	0.021	40.496
##	PSEC4	->	SEC	0.807	0.807	0.025	32.067
##	TRST1	->	TRUST	0.900	0.900	0.016	56.532
##	TRST2	->	TRUST	0.909	0.910	0.020	46.053
##	TRST3	->	TRUST	0.905	0.905	0.021	43.055
##	TRST4	->	TRUST	0.838	0.840	0.031	26.905
##	PPSS1	->	POL	0.868	0.868	0.024	35.576
##	PPSS2	->	POL	0.893	0.894	0.014	64.175
##	PPSS3	->	POL	0.911	0.911	0.016	56.192
##	FAML1	->	FAML	1.000	1.000	0.000	.
##	PREP1*PPSS1	->	REP*POL	0.581	0.601	0.253	2.291
##	PREP1*PPSS2	->	REP*POL	0.510	0.581	0.238	2.144
##	PREP1*PPSS3	->	REP*POL	0.506	0.597	0.253	1.996
##	PREP2*PPSS1	->	REP*POL	0.509	0.630	0.269	1.891
##	PREP2*PPSS2	->	REP*POL	0.421	0.589	0.278	1.516
##	PREP2*PPSS3	->	REP*POL	0.336	0.596	0.326	1.029
##	PREP3*PPSS1	->	REP*POL	0.236	0.504	0.336	0.700
##	PREP3*PPSS2	->	REP*POL	0.555	0.623	0.272	2.035
##	PREP3*PPSS3	->	REP*POL	0.466	0.607	0.288	1.619
##	PREP4*PPSS1	->	REP*POL	0.900	0.606	0.360	2.499
##	PREP4*PPSS2	->	REP*POL	0.836	0.521	0.357	2.343
##	PREP4*PPSS3	->	REP*POL	0.859	0.579	0.335	2.567
##				2.5% CI		97.5% CI	
##	PREP1	->	REP	0.716	0.865		
##	PREP2	->	REP	0.880	0.940		
##	PREP3	->	REP	0.865	0.940		
##	PREP4	->	REP	0.650	0.771		
##	PINV1	->	INV	0.847	0.943		
##	PINV2	->	INV	0.876	0.959		
##	PINV3	->	INV	0.799	0.899		
##	PSEC1	->	SEC	0.753	0.860		
##	PSEC2	->	SEC	0.812	0.906		
##	PSEC3	->	SEC	0.820	0.906		
##	PSEC4	->	SEC	0.755	0.853		
##	TRST1	->	TRUST	0.865	0.928		
##	TRST2	->	TRUST	0.864	0.941		
##	TRST3	->	TRUST	0.858	0.938		
##	TRST4	->	TRUST	0.772	0.895		

```

## PPSS1 -> POL          0.811    0.907
## PPSS2 -> POL          0.863    0.918
## PPSS3 -> POL          0.873    0.938
## FAML1 -> FAML         1.000    1.000
## PREP1*PPSS1 -> REP*POL -0.031    0.922
## PREP1*PPSS2 -> REP*POL -0.030    0.876
## PREP1*PPSS3 -> REP*POL -0.045    0.916
## PREP2*PPSS1 -> REP*POL -0.091    0.951
## PREP2*PPSS2 -> REP*POL -0.154    0.924
## PREP2*PPSS3 -> REP*POL -0.297    0.974
## PREP3*PPSS1 -> REP*POL -0.328    0.927
## PREP3*PPSS2 -> REP*POL -0.132    0.941
## PREP3*PPSS3 -> REP*POL -0.165    0.951
## PREP4*PPSS1 -> REP*POL -0.306    0.984
## PREP4*PPSS2 -> REP*POL -0.360    0.913
## PREP4*PPSS3 -> REP*POL -0.286    0.950
##
## Bootstrapped HTMT:
##
## Original Est. Bootstrap Mean Bootstrap SD 2.5% CI 97.5% CI
## REP -> INV          0.705      0.706      0.049    0.613    0.793
## REP -> POL          0.543      0.541      0.057    0.425    0.645
## REP -> FAML         0.599      0.600      0.056    0.485    0.705
## REP -> REP*POL      0.000      0.000      0.000    0.000    0.000
## REP -> SEC          0.595      0.593      0.046    0.497    0.679
## REP -> TRUST        0.682      0.684      0.043    0.595    0.768
## INV -> POL          0.498      0.499      0.059    0.385    0.617
## INV -> FAML         0.494      0.494      0.056    0.383    0.601
## INV -> REP*POL      0.085      0.104      0.033    0.055    0.179
## INV -> SEC          0.568      0.568      0.049    0.468    0.659
## INV -> TRUST        0.563      0.563      0.052    0.460    0.661
## POL -> FAML         0.596      0.595      0.051    0.493    0.695
## POL -> REP*POL      0.000      0.000      0.000    0.000    0.000
## POL -> SEC          0.622      0.621      0.051    0.518    0.724
## POL -> TRUST        0.458      0.457      0.060    0.342    0.575
## FAML -> REP*POL      0.046      0.064      0.024    0.030    0.123
## FAML -> SEC          0.455      0.455      0.052    0.354    0.556
## FAML -> TRUST       0.471      0.470      0.053    0.368    0.576
## REP*POL -> SEC      0.059      0.081      0.018    0.051    0.121
## REP*POL -> TRUST    0.044      0.071      0.018    0.044    0.117
## SEC -> TRUST        0.685      0.684      0.038    0.605    0.756
##
## Bootstrapped Total Paths:
##
## Original Est. Bootstrap Mean Bootstrap SD 2.5% CI 97.5% CI

```


## REP -> SEC	0.247	0.243	0.057	0.125	0.351
## REP -> TRUST	0.150	0.148	0.037	0.078	0.222
## INV -> SEC	0.181	0.185	0.057	0.075	0.294
## INV -> TRUST	0.109	0.113	0.036	0.045	0.183
## POL -> SEC	0.339	0.340	0.055	0.236	0.450
## POL -> TRUST	0.205	0.207	0.035	0.140	0.276
## FAML -> SEC	0.011	0.012	0.057	-0.104	0.126
## FAML -> TRUST	0.006	0.007	0.035	-0.066	0.077
## REP*POL -> SEC	-0.105	-0.023	0.122	-0.193	0.188
## REP*POL -> TRUST	-0.063	-0.014	0.074	-0.120	0.117
## SEC -> TRUST	0.606	0.608	0.036	0.534	0.673

QUESTION 2

A) Create a common factor model using SEMinR, with the following characteristics:

I) Either respecify all the constructs as being reflective(), or use the as.reflective() function to convert your earlier measurement model to being entirely reflective.

```
security_cf_mm <- constructs(
  reflective("REP", multi_items("PREP", 1:4)),
  reflective("INV", multi_items("PINV", 1:3)),
  reflective("SEC", multi_items("PSEC", 1:4)),
  reflective("TRUST", multi_items("TRST", 1:4)),
  reflective("POL", multi_items("PPSS", 1:3)),
  reflective("FAML", single_item("FAML1")),
  interaction_term(iv = 'REP', moderator = 'POL', method = orthogonal)
)
```

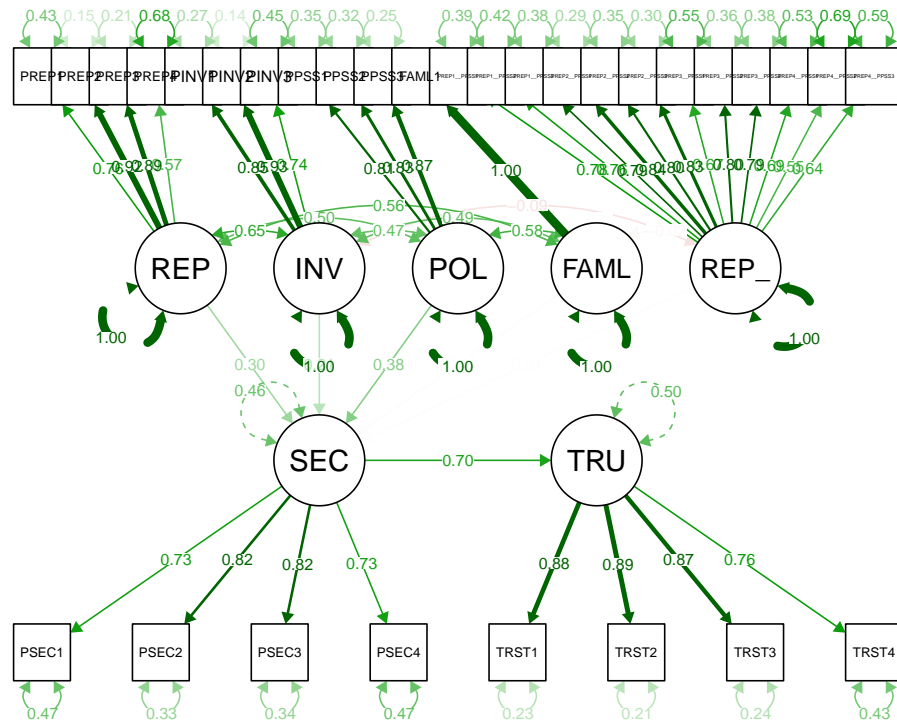
II) Use the same structural model as before (you can just reuse it again!)

```
security_cf_sm <- relationships(
  paths(from = c("REP", "INV", "POL", "FAML", "REP*POL"), to = "SEC"),
  paths(from = "SEC", to = "TRUST")
)
```

B) Show us the following results in table or figure formats

I) Plot a figure of the estimated model (it will look different from your PLS model!)

```
security_cf_pls <- estimate_cbsem(data = security,
                                measurement_model = security_cf_mm,
                                structural_model = security_cf_sm)
sec_cf_report <- summary(security_cf_pls)
plot(security_cf_pls, title = "CF PLS Model")
```



NULL

II) Loadings of composites

```
sec_cf_report$loadings
```

```
## $coefficients
```

	REP	INV	SEC	TRUST	POL	FAML
## PREP1	0.7551328	NA	NA	NA	NA	NA
## PREP2	0.9199208	NA	NA	NA	NA	NA
## PREP3	0.8871362	NA	NA	NA	NA	NA
## PREP4	0.5650059	NA	NA	NA	NA	NA
## PINV1	NA	0.8520004	NA	NA	NA	NA
## PINV2	NA	0.9257476	NA	NA	NA	NA
## PINV3	NA	0.7388750	NA	NA	NA	NA
## PSEC1	NA	NA	0.7308766	NA	NA	NA
## PSEC2	NA	NA	0.8173481	NA	NA	NA
## PSEC3	NA	NA	0.8151708	NA	NA	NA
## PSEC4	NA	NA	0.7260444	NA	NA	NA
## TRST1	NA	NA	NA	0.8800240	NA	NA
## TRST2	NA	NA	NA	0.8886342	NA	NA
## TRST3	NA	NA	NA	0.8690644	NA	NA
## TRST4	NA	NA	NA	0.7575988	NA	NA
## PPSS1	NA	NA	NA	NA	0.8051533	NA
## PPSS2	NA	NA	NA	NA	0.8272576	NA

```

## PPSS3      NA      NA      NA      NA 0.8674335  NA
## FAML1      NA      NA      NA      NA      NA      1
##
## $significance
##
##              Std Estimate      SE      t-Value  2.5% CI
## REP -> PREP1      0.7551328 0.04464916 0.000000e+00 0.6676220
## REP -> PREP2      0.9199208 0.02635333 0.000000e+00 0.8682692
## REP -> PREP3      0.8871362 0.04015103 0.000000e+00 0.8084416
## REP -> PREP4      0.5650059 0.04585583 0.000000e+00 0.4751302
## INV -> PINV1      0.8520004 0.04489927 0.000000e+00 0.7639994
## INV -> PINV2      0.9257476 0.04556425 0.000000e+00 0.8364433
## INV -> PINV3      0.7388750 0.04511602 0.000000e+00 0.6504492
## SEC -> PSEC1      0.7308766 0.03679205 0.000000e+00 0.6587655
## SEC -> PSEC2      0.8173481 0.04480183 0.000000e+00 0.7295381
## SEC -> PSEC3      0.8151708 0.03728082 0.000000e+00 0.7421017
## SEC -> PSEC4      0.7260444 0.03811841 0.000000e+00 0.6513337
## TRUST -> TRST1     0.8800240 0.02272091 0.000000e+00 0.8354919
## TRUST -> TRST2     0.8886342 0.03330783 0.000000e+00 0.8233521
## TRUST -> TRST3     0.8690644 0.03749444 0.000000e+00 0.7955767
## TRUST -> TRST4     0.7575988 0.04846749 0.000000e+00 0.6626042
## POL -> PPSS1      0.8051533 0.04355300 0.000000e+00 0.7197910
## POL -> PPSS2      0.8272576 0.02807169 0.000000e+00 0.7722381
## POL -> PPSS3      0.8674335 0.03273664 0.000000e+00 0.8032708
## FAML -> FAML1      1.0000000 0.00000000      NA 1.0000000
## REP_x_POL -> PREP1_x_PPSS1 0.7781584 0.05799871 0.000000e+00 0.6644831
## REP_x_POL -> PREP1_x_PPSS2 0.7597768 0.05931838 0.000000e+00 0.6435149
## REP_x_POL -> PREP1_x_PPSS3 0.7879106 0.05013554 0.000000e+00 0.6896467
## REP_x_POL -> PREP2_x_PPSS1 0.8447368 0.03649041 0.000000e+00 0.7732169
## REP_x_POL -> PREP2_x_PPSS2 0.8034561 0.03639411 0.000000e+00 0.7321250
## REP_x_POL -> PREP2_x_PPSS3 0.8342444 0.03536430 0.000000e+00 0.7649317
## REP_x_POL -> PREP3_x_PPSS1 0.6736451 0.12948898 1.967997e-07 0.4198514
## REP_x_POL -> PREP3_x_PPSS2 0.8011944 0.03780427 0.000000e+00 0.7270994
## REP_x_POL -> PREP3_x_PPSS3 0.7902063 0.06416741 0.000000e+00 0.6644405
## REP_x_POL -> PREP4_x_PPSS1 0.6854770 0.06906812 0.000000e+00 0.5501059
## REP_x_POL -> PREP4_x_PPSS2 0.5531922 0.06212434 0.000000e+00 0.4314307
## REP_x_POL -> PREP4_x_PPSS3 0.6405843 0.05794028 0.000000e+00 0.5270235
##
##              97.5% CI
## REP -> PREP1      0.8426435
## REP -> PREP2      0.9715724
## REP -> PREP3      0.9658308
## REP -> PREP4      0.6548817
## INV -> PINV1      0.9400013
## INV -> PINV2      1.0150518

```

```
## INV -> PINV3          0.8273007
## SEC -> PSEC1          0.8029877
## SEC -> PSEC2          0.9051581
## SEC -> PSEC3          0.8882399
## SEC -> PSEC4          0.8007551
## TRUST -> TRST1        0.9245562
## TRUST -> TRST2        0.9539164
## TRUST -> TRST3        0.9425522
## TRUST -> TRST4        0.8525933
## POL -> PPSS1          0.8905156
## POL -> PPSS2          0.8822771
## POL -> PPSS3          0.9315961
## FAML -> FAML1         1.0000000
## REP_x_POL -> PREP1_x_PPSS1 0.8918338
## REP_x_POL -> PREP1_x_PPSS2 0.8760387
## REP_x_POL -> PREP1_x_PPSS3 0.8861744
## REP_x_POL -> PREP2_x_PPSS1 0.9162567
## REP_x_POL -> PREP2_x_PPSS2 0.8747873
## REP_x_POL -> PREP2_x_PPSS3 0.9035572
## REP_x_POL -> PREP3_x_PPSS1 0.9274389
## REP_x_POL -> PREP3_x_PPSS2 0.8752894
## REP_x_POL -> PREP3_x_PPSS3 0.9159721
## REP_x_POL -> PREP4_x_PPSS1 0.8208480
## REP_x_POL -> PREP4_x_PPSS2 0.6749536
## REP_x_POL -> PREP4_x_PPSS3 0.7541452
```

III) Regression coefficients of paths between factors, and their p-values

```
sec_cf_report$paths[1:2]
```

```
## $coefficients
##              SEC      TRUST
## R^2          0.540381651 0.4951084
## REP          0.299536782      NA
## INV          0.214253245      NA
## POL          0.376401499      NA
## FAML         -0.008837653      NA
## REP_x_POL    0.008355287      NA
## SEC          NA 0.7036394
##
## $pvalues
##              SEC TRUST
## REP          3.817181e-05 NA
## INV          3.534482e-03 NA
```

## POL	4.380974e-09	NA
## FAML	8.996836e-01	NA
## REP_x_POL	8.516847e-01	NA
## SEC	NA	0