BACS HW (Week 15)

108020024

due on 05/28 (Sun) helped by 108020033

```
#install.packages("seminr")
library(seminr)
```

Question 1) Composite Path Models using PLS-PM

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

```
sq <- read.csv("security_data_sem.csv")
```

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

```
sec_mm <- constructs(
composite("REP", multi_items("PREP", 1:4)),
composite("INV", multi_items("PINV", 1:3)),
composite("SEC", multi_items("PSEC", 1:4)),
composite("POL", multi_items("PPSS", 1:3)),
composite("TRUST", multi_items("TRST", 1:4)),
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:

```
sec_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:

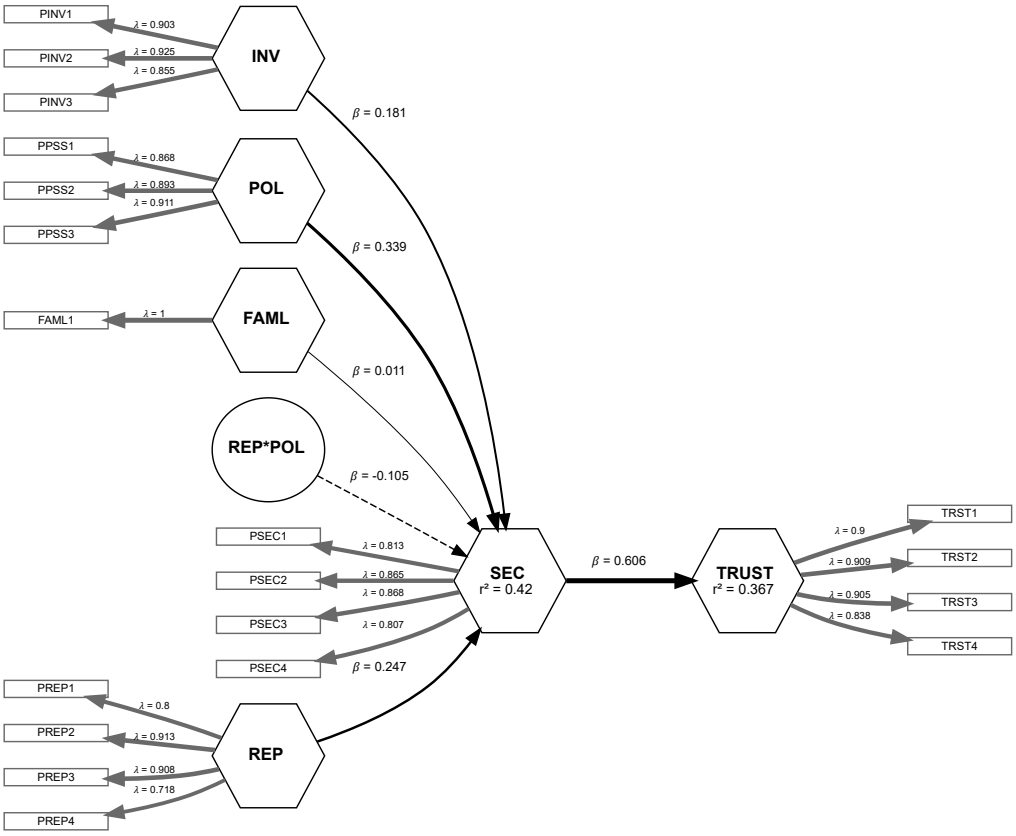
i) Plot a figure of the estimated model

```
sec_pls <- estimate_pls(data = sq,
  measurement_model = sec_mm,
  structural_model = sec_sm)
```

```
## Generating the seminr model
```

```
## All 405 observations are valid.
```

```
plot(sec_pls)
```



ii) Weights and loadings of composites

```
summary(sec_pls)$weight
```

```
##                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
## 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
## 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
## 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
```

```
summary(sec_pls)$composite_scores
```

```
##              REP          INV          SEC         POL       TRUST       FAML
## 1   -0.240572314 -0.398455386 -0.284321807  0.37825446  0.60084552  0.8309935
## 2    0.620519517  0.276012054  0.090876526 -0.08294958  0.77247995  0.2342694
## 3    0.203886717 -0.218333295  0.454653128 -0.08217966  0.41369666  0.8309935
## 4   -0.319790071  0.028839379 -0.118692629  0.13153560  0.06268507 -0.3624546
## 5    0.870621065 -0.218333295  0.477093769 -0.04994597  1.15060579  0.8309935
## 6   -0.319790071 -0.532556552 -0.096251989  0.34525086 -0.31544077 -0.3624546
## 7    0.500223272  0.276012054 -1.355496401 -0.47891633 -1.40336150 -0.3624546
## 8    0.870621065  0.276012054 -0.118692629 -0.08371949  0.41369666 -0.3624546
## 9   -2.098068272 -1.341125158 -2.402939356 -1.40055449 -1.79323161  0.2342694
## 10   0.203886717  0.276012054  0.454653128  0.34525086 -0.68584551  0.8309935
## 11   0.870621065 -0.779729226  1.404138522  1.01940025  0.79182250  0.2342694
## 12   0.453988266  0.837407985  0.058358278  0.37748455  0.06268507  0.2342694
## 13   0.870621065  1.084580660  1.006499549  0.80491507  1.15060579  0.8309935
## 14   0.315024376  0.837407985  1.404138522  1.01940025  0.97510000  0.8309935
## 15   0.050607722  0.028839379  1.404138522  1.01940025  0.59697416  0.8309935
## 16   0.870621065  1.084580660  0.466074858  1.01940025  0.59697416  0.8309935
## 17   0.050607722 -1.341125158  0.266583310 -0.08294958 -0.33093358 -0.9591787
## 18  -0.134591175 -0.779729226 -0.880108205 -0.32889853 -0.32321248 -0.9591787
## 19  -0.319790071 -0.532556552 -0.118692629 -0.32889853 -0.88461582 -0.3624546
## 20   0.870621065  1.084580660  1.404138522 -0.26520107  1.15060579  0.8309935
## 21   0.870621065  1.084580660  0.907250989  1.01940025  1.15060579  0.8309935
## 22   0.050607722 -0.218333295  0.477093769  0.34525086 -0.69356661  0.2342694
## 23  -0.037768621  0.028839379  0.620282306  0.55973604  0.41369666  0.8309935
## 24   0.870621065  0.837407985  1.404138522  0.80568499  1.15060579  0.8309935
## 25  -0.342551386 -0.175781442  0.651859250 -0.47737650  0.40979631  0.2342694
## 26   0.870621065 -0.532556552 -1.376995738 -0.26520107 -0.69356661 -0.9591787
## 27   0.870621065  0.343062637  0.343041535  1.01940025  1.15060579  0.8309935
## 28   0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 29  -0.801325523  0.276012054 -1.045737383 -0.97081423 -0.86522267 -0.9591787
## 30  -1.589418965  1.084580660  0.278543524  1.01940025 -1.58663900 -0.9591787
## 31   0.870621065  1.084580660 -1.619083140 -1.00304791  0.78797276  0.8309935
## 32   0.870621065  1.084580660  1.216068704  1.01940025  0.62408841  0.8309935
## 33   0.250121724 -0.779729226 -0.526409210 -0.32889853 -0.13216327 -0.9591787
## 34   0.315024376 -0.532556552 -2.413958267 -0.26520107 -1.06012161 -0.3624546
## 35   0.870621065  1.084580660 -0.880108205 -1.00304791  0.79959420 -0.9591787
## 36   0.018687821  0.837407985 -2.558490927 -1.64419370 -0.32321248  0.2342694
## 37   0.870621065  1.084580660  0.709103564  1.01940025  0.97510000  0.8309935
## 38   0.315024376 -1.341125158 -0.173651517 -1.21676318  1.15060579 -0.3624546
## 39  -0.166511076  1.084580660  1.404138522  1.01940025 -1.05234991  0.8309935
## 40   0.315024376  0.276012054  1.404138522  1.01940025  0.41369666 -0.3624546
## 41   0.870621065  0.276012054  0.256505703  0.59196973  0.23041916  0.8309935
## 42   0.870621065  1.084580660  0.311464591  0.34525086  1.15060579  0.8309935
## 43   0.500223272  0.028839379  0.090876526 -0.32889853 -0.13993498  0.2342694
## 44   0.870621065 -0.218333295 -0.816954317  1.01940025  1.15060579  0.2342694
## 45   0.203886717  0.276012054 -0.813727587  0.34525086 -0.87689472  0.8309935
## 46   0.870621065  1.084580660  0.819773854 -0.75709896  1.15060579 -0.9591787
## 47   0.315024376  1.084580660  0.642722946  0.59119981  0.41369666  0.2342694
## 48  -0.319790071 -1.341125158 -0.306762448 -1.43047844 -0.32321248  0.2342694
## 49  -1.065288671  0.837407985  1.404138522 -0.70224240  1.15060579  0.8309935
## 50   0.717342070  1.084580660  0.996421942  1.01940025  0.06270669  0.2342694
## 51   0.500223272  0.028839379 -0.771131733 -0.54261379  0.97510000  0.8309935
## 52  -1.371237318  0.276012054  0.025437211  0.55973604  0.41369666 -0.3624546
## 53  -0.366025078 -0.532556552 -0.880108205 -0.97081423 -1.24724885 -0.3624546
## 54   0.870621065 -0.285383878 -0.681960780  1.01940025  0.60469526  0.2342694
## 55   0.870621065  0.343062637  0.289965254 -0.32889853  0.06655643  0.8309935
## 56   0.685422169 -0.218333295  1.216068704  0.80491507  0.59697416  0.2342694
## 57  -1.822369223 -0.804227957  0.069377189  0.34525086  0.41369666  0.2342694
## 58   0.315024376  1.084580660  0.123394773 -0.26520107  0.59697416  0.2342694
## 59  -1.107883513  0.276012054 -1.078255630 -3.69964547  1.15060579 -3.3460749
## 60   0.389085614  0.837407985 -0.074752652 -0.08217966  0.60082390  0.8309935
## 61   0.500223272  0.547683459 -1.672697905 -1.00304791  0.41369666  0.2342694
## 62   0.870621065 -0.846779810  1.404138522  1.01940025  1.15060579  0.8309935
## 63  -0.387530798 -1.709507782  1.238509344  0.80568499 -0.30784250  0.8309935
## 64   0.870621065  1.084580660 -0.064675045  1.01940025  0.03944218  0.8309935
## 65   0.870621065  0.837407985  0.862369708 -3.69964547  1.15060579 -3.3460749
## 66   0.315024376  1.084580660 -0.319475176  0.80568499 -2.17523618 -0.3624546
## 67  -1.589418965 -1.341125158 -0.880108205 -1.00304791 -3.27084902 -0.9591787
```

```
##  68   0.203886717  1.084580660 -0.692038387  0.34525086 -0.32321248  0.8309935
##  69  -1.907453985 -1.093952484 -1.609005534 -0.54338370 -2.53393988  0.2342694
##  70  -0.954604518 -1.341125158 -0.284321807 -0.32889853 -0.32321248 -0.3624546
##  71   0.050607722 -0.532556552  0.642722946  0.34525086  0.05106362  0.2342694
##  72   0.685422169  0.276012054  0.046936548  0.34525086  0.41369666 -0.3624546
##  73   0.500223272  1.084580660  0.839929068  0.16376929  1.15060579  0.8309935
##  74   0.870621065  0.276012054  0.642722946  0.34525086  0.41369666  0.8309935
##  75   0.685422169  1.084580660  1.028940189  0.13076569  0.96347855  0.8309935
##  76  -0.319790071 -0.532556552 -0.118692629 -0.32889853  0.03942056 -0.3624546
##  77   0.870621065 -0.309882609 -0.503968569  0.34602078  0.03942056  0.8309935
##  78  -0.319790071 -0.242832025  0.642722946  0.34525086  0.41369666  0.8309935
##  79   0.203886717  0.343062637  0.454653128  0.80491507  0.78797276  0.8309935
##  80   0.315024376  1.084580660 -0.383220672 -1.00304791  0.58922407 -2.7493508
##  81   0.315024376  1.084580660  1.404138522 -0.05148580  1.15060579  0.8309935
##  82   0.050607722  0.276012054  0.642722946 -0.32889853  0.41369666 -0.3624546
##  83   0.315024376 -1.051400631  0.839929068  0.37825446  0.41369666  0.8309935
##  84  -0.504988968 -0.218333295  0.808352124  0.34525086  0.60469526  0.8309935
##  85   0.870621065 -0.817119174  1.404138522  1.01940025 -1.38782545  0.8309935
##  86  -0.027547186  1.084580660 -1.210963740  0.59196973 -1.78538768  0.2342694
##  87  -1.589418965 -0.242832025 -0.185073247  0.34525086 -1.06012161 -2.7493508
##  88   0.018687821 -1.835470507 -0.315898751 -0.08294958 -1.23562741  0.8309935
##  89   0.870621065  0.837407985  1.404138522  1.01940025  1.15060579  0.8309935
##  90  -0.551223974  0.276012054 -0.868686475 -0.08217966 -1.23562741  0.2342694
##  91  -0.801325523 -1.051400631 -0.638020803 -0.26443115 -1.25112021  0.2342694
##  92   0.870621065  1.084580660  0.907250989  1.01940025  1.15060579  0.8309935
##  93   0.870621065 -1.341125158  0.046936548  0.16299937  0.96347855  0.2342694
##  94   0.500223272  0.276012054 -0.284321807 -0.96927440  0.60469526  0.2342694
##  95   0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.2342694
##  96   0.870621065  1.084580660  1.404138522  0.80491507  1.15060579  0.8309935
##  97   0.685422169 -0.532556552  0.642722946 -0.51038010 -0.11282073 -1.5559027
##  98   0.685422169 -0.218333295  0.454653128 -0.08217966  0.23819086  0.8309935
##  99  -0.769405621 -0.532556552  0.068435885 -0.32889853  0.95960719  0.8309935
## 100   0.389085614  0.004340649 -0.284321807  1.01940025 -0.68584551  0.8309935
## 101  -0.769405621 -0.218333295 -1.045737383  1.01940025 -1.06012161  0.8309935
## 102   0.410784080  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 103   0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 104   0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.2342694
## 105   0.870621065  1.084580660  0.212565726  1.01940025  1.15060579  0.8309935
## 106   0.315024376 -0.218333295 -0.284321807 -0.51038010  0.06270669  0.2342694
## 107   0.315024376 -0.532556552 -0.118692629 -0.75709896  0.23819086 -0.3624546
## 108  -0.769405621 -0.779729226 -0.118692629 -1.00304791 -1.06012161 -0.3624546
## 109   0.315024376  0.590235311  1.404138522  0.16376929  1.15060579  0.2342694
## 110   0.268789369  0.812909255  0.863311011  0.59042990  0.24596257  0.8309935
## 111   0.685422169  1.084580660  0.266583310  0.77345130  1.15060579  0.8309935
## 112   0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.2342694
## 113  -0.866228175 -1.341125158 -0.670539050  0.34525086 -1.05234991 -0.3624546
## 114  -1.589418965 -1.341125158 -0.880108205 -1.00304791 -1.06012161 -2.7493508
## 115  -0.769405621 -1.341125158 -0.880108205 -0.47891633  0.41369666  0.2342694
## 116   0.315024376  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 117   0.620519517  1.084580660 -0.284321807 -1.58203607  0.42146836  0.8309935
## 118  -1.468059871 -1.093952484 -1.431954626  0.80568499 -2.34294128 -0.3624546
## 119   0.685422169  0.028839379 -0.118692629  1.01940025 -0.68584551  0.2342694
## 120   0.870621065  1.084580660  1.404138522  0.13076569  0.41369666  0.2342694
## 121  -0.319790071  0.004340649 -0.438529255 -0.75709896  0.41369666 -0.3624546
## 122   0.870621065  1.084580660 -0.614691985  0.80568499  0.41369666  0.8309935
## 123   0.500223272  0.812909255 -0.681960780 -1.54980238 -2.35066238  0.2342694
## 124   0.250121724  0.276012054  0.036858941 -1.43201827 -0.50256801  0.8309935
## 125   0.870621065  1.084580660 -0.314151808 -0.29743475  1.15060579  0.8309935
## 126  -0.462847631  0.276012054 -0.118692629  0.34525086 -0.49871827  0.8309935
## 127  -0.266171704 -0.490004700  0.180988782 -0.26366124  1.15060579  0.8309935
## 128   0.500223272 -0.532556552  0.266583310 -0.51115002  1.15060579  0.8309935
## 129   0.315024376 -1.341125158 -0.880108205 -0.75709896  0.42533972  0.2342694
## 130  -1.555114494 -0.532556552  0.289023951 -0.75709896 -0.31544077 -0.9591787
## 131   0.410784080  1.084580660  1.404138522  1.01940025  1.15060579  0.2342694
## 132  -0.166511076  0.523184728  0.123394773  0.13153560 -0.86135131 -0.3624546
## 133   0.064922827  0.837407985 -0.152904695 -0.29589492 -0.12829191  0.2342694
## 134   0.315024376 -0.218333295 -1.068178023 -0.26520107 -0.50256801  0.8309935
## 135   0.685422169  0.028839379  0.068435885  0.80491507  0.77632969  0.8309935
## 136   0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
```

```
## 137  0.157651711 -0.532556552 -1.575143163 -0.90634685 -2.89272318 -0.9591787
## 138 -4.049458995  0.028839379 -1.829593599 -0.11518326  0.03557082  0.8309935
## 139  0.315024376  1.084580660 -0.880108205 -1.00304791  0.04334252  0.8309935
## 140 -0.954604518 -1.093952484 -0.493890962 -0.54261379 -0.32321248 -0.3624546
## 141  0.870621065  1.084580660  0.642722946  1.01940025  0.58920245  0.8309935
## 142  0.500223272 -1.341125158  1.404138522  1.01940025  1.15060579  0.8309935
## 143 -1.372300167  0.028839379 -0.880108205  1.01940025 -1.06012161 -2.1526268
## 144  0.203886717  0.276012054 -1.001797405  0.37748455  0.05106362  0.8309935
## 145  0.315024376  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 146  0.685422169  1.084580660  1.404138522  0.37825446  1.15060579  0.8309935
## 147 -2.081175852 -1.859969237 -1.211366560 -1.18452949 -1.05234991 -0.3624546
## 148 -1.803248072 -0.260885147  1.072880167 -1.00304791 -1.62152495 -0.9591787
## 149 -0.626348062 -0.218333295  0.621626429  0.34525086  1.15060579 -0.3624546
## 150  0.717342070  0.276012054  0.467016162  0.55973604 -0.32706222  0.8309935
## 151  0.004372716  0.812909255  0.610204699  0.31378709  0.77247995 -0.3624546
## 152  0.315024376  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 153  0.620519517  0.276012054 -0.472391625 -0.32889853 -0.13998558  0.2342694
## 154  0.870621065  0.028839379 -0.503968569  0.34525086 -0.32321248  0.8309935
## 155  0.315024376  0.343062637  0.907250989  0.37825446 -0.50256801  0.2342694
## 156 -1.724030315 -1.853523629 -2.039162754 -2.56583187 -1.98025764 -1.5559027
## 157  0.685422169  1.084580660  0.311464591  0.16299937  0.41369666 -3.3460749
## 158 -2.826065108 -1.853523629 -1.707904399 -1.70866108 -2.33126923 -1.5559027
## 159 -1.742697960 -0.532556552  0.642722946 -1.00304791  0.22269806  0.2342694
## 160  0.870621065  1.084580660 -0.880108205  0.37594472 -0.13233671  0.8309935
## 161  0.685422169 -0.532556552  1.404138522  1.01940025  1.15060579  0.2342694
## 162 -2.594631205 -2.131640642 -2.380498716 -1.89168248 -1.63701776 -1.5559027
## 163 -0.551223974 -0.532556552 -0.472391625 -0.54261379 -0.32321248 -2.1526268
## 164  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 165 -2.640866211 -1.606350954 -1.024238046 -0.54184387 -1.59053934 -2.1526268
## 166 -2.704706014 -1.853523629 -2.414361087 -1.39901467 -1.06791494 -1.5559027
## 167 -2.506254861 -2.439418291 -1.410455289 -1.64573353 -1.63314640 -0.3624546
## 168 -1.408572609 -2.958262370 -1.839671206 -1.39978458 -1.79310878 -1.5559027
## 169  0.315024376  1.084580660  1.238509344 -0.29589492  1.15060579  0.2342694
## 170  0.870621065  0.590235311 -0.870030598 -0.26289132 -0.51028911  0.8309935
## 171  0.050607722  0.028839379 -0.306762448  0.34525086  0.41369666 -0.3624546
## 172 -2.794145206 -2.439418291 -1.839671206 -1.46348204 -1.99187909 -2.1526268
## 173 -2.890967760 -2.439418291 -2.193370201 -1.89168248 -1.62929666 -2.1526268
## 174 -2.352975866 -1.570244710 -1.410858109 -2.13686151 -1.22403495 -1.5559027
## 175  0.685422169  0.276012054  0.455594431  0.59119981  0.79182250  0.8309935
## 176  0.050607722  0.276012054 -1.632387477 -1.00304791 -0.32321248 -0.3624546
## 177 -2.794145206 -2.149693764 -2.027741024 -1.49417590 -2.17130685 -2.1526268
## 178 -1.900329496 -1.697900268 -2.214869538 -2.10539774 -1.45379086 -2.1526268
## 179 -0.166511076  0.028839379 -1.828249476  0.55973604 -0.88461582  0.8309935
## 180 -0.944383082  1.084580660  0.611548822  1.01940025 -1.23947715  0.8309935
## 181 -2.812812852 -1.853523629 -2.049240361 -2.13763143 -1.78155956 -2.1526268
## 182 -2.140663114 -2.198691225 -1.222385471 -1.24822695 -2.16353514 -1.5559027
## 183 -1.357985062 -1.051400631 -0.880108205 -0.05071589  0.60469526  0.2342694
## 184  0.870621065  1.084580660  1.404138522 -0.48199599  1.15060579  0.8309935
## 185 -2.352975866 -1.606350954 -2.039162754 -1.89091256 -1.60598154 -2.1526268
## 186  0.870621065  0.276012054  0.078513492  1.01940025  0.78797276  0.8309935
## 187 -0.769405621 -0.013712473 -0.118692629  0.59042990 -0.32321248 -0.9591787
## 188  0.870621065  1.084580660  0.499534409  1.01940025  0.41369666  0.8309935
## 189  0.083590473  0.276012054 -0.516331603  0.34525086 -1.06012161  0.2342694
## 190  0.315024376  1.084580660  0.642722946 -0.51115002  0.41369666 -0.9591787
## 191 -1.589418965  1.084580660 -1.672697905 -1.21676318 -0.86912301 -2.1526268
## 192  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 193 -1.685178669 -0.260885147  0.630359913  1.01940025 -1.63311741  0.2342694
## 194 -0.769405621 -1.341125158 -0.880108205 -2.71584967 -1.76214479 -0.9591787
## 195  0.203886717 -0.532556552 -0.880108205  0.34525086 -0.49871827 -0.3624546
## 196  0.870621065 -0.218333295  0.454653128  0.34525086  0.05106362  0.2342694
## 197  0.870621065  1.084580660  0.257447007 -1.12006211  0.41369666  0.8309935
## 198 -1.927896857 -0.260885147 -0.493890962  0.09930191 -0.50648998 -2.1526268
## 199  0.870621065  1.084580660  1.404138522  1.01940025  0.59697416  0.8309935
## 200  0.332629172 -1.093952484 -0.295340717 -1.03528160 -1.79703075 -0.9591787
## 201  0.870621065  1.084580660  0.830792764  1.01940025  0.41369666  0.8309935
## 202  0.315024376 -0.599607136  1.404138522  1.01940025  1.15060579 -0.9591787
## 203  0.639187162  1.084580660  0.343041535  0.37671464  0.78410140  0.8309935
## 204 -1.282860974  0.028839379 -0.118692629 -0.08217966 -0.69748858  0.8309935
## 205  0.870621065  1.084580660  0.499534409  1.01940025  0.78797276  0.2342694
```

```
## 206  0.203886717 -0.532556552 -0.118692629 -0.51038010 -1.46533272 -0.3624546
## 207 -3.034025319  1.084580660 -0.880108205 -2.28764923 -3.27084902 -0.9591787
## 208  0.050607722  0.276012054  1.404138522  1.01940025  0.41369666  0.8309935
## 209  0.870621065  1.084580660  1.404138522  1.01940025  0.23819086  0.8309935
## 210 -0.305474966 -0.532556552 -0.880108205 -0.75709896 -0.13221388 -0.3624546
## 211  0.500223272  0.276012054  0.100954133  0.80568499  1.15060579  0.8309935
## 212  0.315024376  0.276012054  0.839929068  1.01940025 -1.43437609  0.8309935
## 213 -0.616126626 -0.846779810  0.223584636  1.01940025 -1.05240051 -0.9591787
## 214  0.870621065  1.084580660 -1.508951334  1.01940025  0.97510000  0.8309935
## 215  0.315024376  0.276012054 -0.118692629  1.01940025  0.41369666  0.8309935
## 216  0.018687821 -0.285383878 -0.118692629  1.01940025 -0.13993498  0.2342694
## 217  0.050607722  0.276012054  0.246428096 -0.51115002  0.41369666 -0.3624546
## 218  0.870621065  0.028839379 -0.084830259 -0.32889853 -0.51421108  0.2342694
## 219  0.161745380  0.276012054  0.642722946  0.34525086  0.05106362  0.2342694
## 220  0.300709270 -1.341125158 -0.074752652 -0.32889853  0.60469526 -0.9591787
## 221  0.870621065  0.547683459  0.907250989  1.01940025  0.78797276  0.8309935
## 222 -0.134591175 -0.779729226 -0.284321807 -0.54338370 -0.50643937  0.8309935
## 223 -0.166511076  0.837407985 -1.144985943 -1.43047844 -0.31544077 -0.3624546
## 224  0.050607722 -0.737177374 -0.151613697  0.77345130  0.22656942  0.2342694
## 225 -1.589418965 -1.341125158 -0.880108205 -0.75786888 -1.06012161  0.2342694
## 226 -2.049255951  1.084580660  1.404138522 -0.05148580  1.15060579 -3.3460749
## 227  0.315024376  0.837407985 -0.305821144 -0.51115002  0.41369666  0.2342694
## 228  0.050607722  0.276012054  0.642722946 -3.69964547  0.41369666 -3.3460749
## 229  0.870621065  1.084580660 -1.131331911  1.01940025  1.15060579  0.2342694
## 230  0.870621065 -0.943491029  1.404138522  1.01940025  1.15060579  0.8309935
## 231  0.018687821 -0.779729226 -0.659520140  1.01940025 -0.87684411  0.8309935
## 232 -0.430927730 -0.218333295  0.069377189  1.01940025 -1.23562741  0.2342694
## 233  0.870621065 -0.532556552 -0.826090621 -0.29666484  0.23819086  0.8309935
## 234  0.500223272  1.084580660 -0.670539050 -0.75709896  0.59697416  0.2342694
## 235  0.870621065  0.276012054 -0.338339391 -1.00304791  0.60469526  0.8309935
## 236 -1.589418965 -1.341125158 -0.880108205 -3.69964547 -1.06012161 -3.3460749
## 237 -0.073782192 -0.218333295 -0.274244200 -0.51268984 -0.68976748  0.8309935
## 238 -0.879480431 -0.779729226 -0.284321807  0.34525086 -0.49871827 -0.3624546
## 239  0.685422169  1.084580660  1.404138522  0.80568499  1.15060579  0.8309935
## 240  0.870621065  0.276012054  1.404138522 -0.32889853  0.41369666  0.8309935
## 241  0.315024376  0.276012054 -0.880108205 -0.26520107  0.41369666  0.8309935
## 242  0.435320620 -0.532556552 -1.068178023 -0.32889853 -0.51421108  0.8309935
## 243 -0.319790071  1.084580660  0.144894110  0.80568499 -0.86912301  0.8309935
## 244  0.870621065  0.837407985 -0.692038387 -0.97158414  0.60469526  0.8309935
## 245  0.870621065  1.084580660  1.404138522 -0.29589492  0.41369666  0.8309935
## 246  0.315024376  1.084580660 -0.878764082 -0.26597098 -0.33485554 -0.3624546
## 247  0.435320620  0.028839379 -0.327320481  1.01940025  0.41369666 -2.7493508
## 248 -0.416612624  1.084580660 -0.659520140 -0.72486528 -0.68199577  0.2342694
## 249 -0.319790071 -1.341125158 -0.880108205 -0.97081423  0.41369666 -1.5559027
## 250  0.870621065  1.084580660 -1.222249807  1.01940025  1.15060579  0.8309935
## 251  0.410784080  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 252 -0.425771211  0.837407985  0.011783180  1.01940025  1.15060579  0.8309935
## 253  0.315024376  0.028839379 -0.097193292 -0.97158414  0.60469526 -0.3624546
## 254 -1.499979772  0.343062637 -3.164354932 -0.26289132 -2.35831126 -2.7493508
## 255  0.685422169 -0.285383878 -1.894091610 -1.21753309 -0.68584551  0.8309935
## 256  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 257 -1.282860974 -1.341125158 -0.880108205  0.37825446 -2.72101652 -2.7493508
## 258 -1.019507170 -1.588297832 -0.879166902 -0.75786888 -0.13608524  0.8309935
## 259 -1.557499063 -0.779729226 -0.880108205  0.80568499 -0.12059243 -0.9591787
## 260  0.203886717  1.084580660  0.069377189  0.80491507 -0.51421108  0.8309935
## 261  0.315024376  0.004340649 -0.064675045  1.01940025  0.06268507  0.8309935
## 262 -0.166511076  1.084580660  0.034223820  0.80568499  0.02784972  0.2342694
## 263 -0.102671273 -0.532556552 -0.118692629 -0.32889853  0.05106362  0.2342694
## 264  0.870621065  1.084580660 -0.880108205 -0.97081423 -0.13993498 -0.3624546
## 265 -0.166511076  0.276012054 -0.449950985  0.34525086  0.41369666  0.2342694
## 266  0.453988266  0.276012054 -1.045737383 -0.97158414 -0.87684411  0.8309935
## 267  0.315024376 -1.341125158 -0.516331603  1.01940025  0.41369666 -0.3624546
## 268 -1.446361405 -0.532556552 -0.118692629 -0.29743475 -1.23562741 -0.9591787
## 269  0.870621065  1.084580660 -0.692038387  1.01940025 -1.06012161  0.8309935
## 270  0.500223272  0.276012054 -0.185073247 -0.93781062 -2.33909154 -0.3624546
## 271  0.870621065 -2.414919560 -0.880108205  1.01940025  0.06270669  0.8309935
## 272  0.050607722  0.276012054  0.642722946  1.01940025 -1.04860138  0.8309935
## 273  0.870621065  1.084580660  0.830792764  1.01940025 -1.05234991  0.8309935
## 274  0.050607722 -0.532556552  0.642722946  0.34525086 -0.32321248  0.2342694
```

```
## 275  0.685422169  0.276012054  0.477093769  0.13076569  0.23819086  0.2342694
## 276  0.870621065  1.084580660  0.642722946  1.01940025  0.41369666  0.2342694
## 277  0.050607722  0.276012054 -1.409513985 -0.29666484 -1.06782109  0.8309935
## 278  0.870621065 -2.427810778 -0.472391625 -3.69964547  0.43303920 -3.3460749
## 279  0.050607722 -0.779729226  1.404138522  0.34525086  1.15060579 -0.3624546
## 280 -0.547130305  1.084580660  0.839929068  1.01940025  1.15060579  0.8309935
## 281  0.870621065  1.084580660  0.830792764  0.34525086  1.15060579  0.8309935
## 282  0.870621065  1.084580660  0.808352124  1.01940025  1.15060579  0.8309935
## 283  0.870621065  1.084580660  0.852292101  1.01940025  0.96347855  0.8309935
## 284 -0.222967518  0.523184728  1.205991097  0.16376929  1.15060579  0.2342694
## 285  0.315024376  0.276012054  0.311464591 -0.29743475 -0.13993498 -0.3624546
## 286  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 287 -1.250941073 -1.588297832 -0.481527929  0.13153560 -1.06012161 -0.9591787
## 288  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 289  0.315024376 -0.218333295  0.477093769  1.01940025  0.41369666  0.8309935
## 290  0.639187162  1.084580660 -1.586564893  1.01940025 -0.30392054  0.8309935
## 291  0.315024376 -0.532556552 -0.692038387 -0.75632905 -0.68584551 -1.5559027
## 292  0.315024376  1.084580660 -0.880108205 -0.35959238  0.05109261 -0.9591787
## 293  0.315024376  0.837407985  1.007843672  1.01940025  0.77632969  0.8309935
## 294  0.639187162  1.084580660  0.002646876  1.01940025  0.59697416  0.8309935
## 295 -0.399007828  1.084580660  1.404138522  1.01940025 -0.13993498 -0.3624546
## 296  0.870621065  0.276012054  0.454653128  1.01940025  0.78797276  0.2342694
## 297 -0.134591175 -2.149693764 -1.045737383  0.34525086 -1.76991650 -0.3624546
## 298 -0.134591175 -1.069453753 -1.067236720 -0.54338370 -0.32321248 -0.3624546
## 299  0.500223272  0.590235311 -0.681960780 -1.18452949  0.60082390 -0.9591787
## 300 -0.319790071 -1.341125158 -0.880108205 -0.32889853 -0.32321248 -0.9591787
## 301 -0.769405621 -0.532556552 -0.615580162 -0.54261379 -0.68971687 -0.3624546
## 302  0.870621065 -0.242832025  1.404138522  1.01940025 -0.32321248  0.8309935
## 303 -0.583143876 -2.149693764 -0.880108205 -1.85790896 -0.87299437 -1.5559027
## 304  0.870621065  1.084580660  1.238509344  1.01940025  1.15060579  0.8309935
## 305  0.315024376  0.343062637  1.404138522  1.01940025  0.41369666  0.2342694
## 306  0.268789369 -0.779729226  0.477093769 -0.29743475  0.60469526 -0.3624546
## 307  0.870621065  0.028839379 -0.284321807  1.01940025  0.06268507 -1.5559027
## 308  0.870621065  0.276012054 -0.306762448  1.01940025  0.41369666  0.8309935
## 309  0.500223272  1.084580660  0.191066389  0.37825446  0.59697416  0.8309935
## 310 -0.134591175 -0.532556552 -0.482469232 -0.57484748 -0.49871827 -0.3624546
## 311  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 312  0.870621065 -1.341125158 -0.880108205  0.80491507  0.06270669  0.8309935
## 313  0.315024376 -1.051400631  1.404138522  0.59119981  1.15060579 -0.3624546
## 314 -0.134591175 -0.532556552 -0.868686475  1.01940025  0.41369666  0.2342694
## 315  0.870621065  1.084580660  0.642722946  0.80491507 -0.32321248 -0.3624546
## 316  0.500223272  0.269566445 -0.514046176 -0.39182607  1.15060579  0.8309935
## 317 -1.895976955 -1.341125158 -0.503968569 -0.08294958  0.22656942 -1.5559027
## 318  0.050607722 -0.532556552 -0.880108205  0.34525086 -0.69356661  0.2342694
## 319  0.410784080  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 320  0.050607722  0.004340649 -1.102981697  0.34525086 -0.32321248 -0.3624546
## 321  0.315024376 -0.532556552  0.907250989 -0.32889853  1.15060579  0.2342694
## 322  0.870621065  1.084580660 -0.880108205 -0.36113221 -0.87684411  0.2342694
## 323  0.870621065 -1.341125158  1.404138522  1.01940025 -0.47542478 -0.9591787
## 324  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 325 -0.954604518  0.276012054 -0.118692629  0.34525086 -0.32321248 -0.3624546
## 326  0.870621065  1.084580660  1.404138522  0.80568499  1.15060579  0.2342694
## 327 -1.417472324 -1.630849685 -1.222385471 -0.75632905  0.05491336 -0.9591787
## 328  0.315024376 -1.341125158 -0.880108205 -1.43124835  0.41369666  0.2342694
## 329  0.870621065  1.084580660  0.907250989  1.01940025  1.15060579  0.8309935
## 330  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 331  0.315024376  0.837407985  1.404138522  1.01940025  1.15060579 -0.3624546
## 332  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 333 -0.430927730 -0.779729226 -0.284321807 -1.12160194 -0.13993498 -0.3624546
## 334  0.018687821  0.028839379 -0.118692629 -0.54338370 -0.32321248  0.2342694
## 335  0.315024376  1.084580660  0.996421942 -0.90634685  0.03169946 -0.3624546
## 336  0.315024376  0.276012054  0.642722946  1.01940025 -1.06012161 -2.7493508
## 337  0.389085614  0.276012054 -0.221167919  0.80491507  1.15060579  0.8309935
## 338  0.346944277  0.276012054 -0.460969895 -1.43201827  0.59697416  0.2342694
## 339 -0.607680416 -0.532556552  0.642722946  0.34525086 -0.87684411  0.2342694
## 340  0.315024376  0.276012054 -0.526409210 -0.29666484 -0.31156941 -0.3624546
## 341  0.870621065  0.343062637  0.642722946  0.80491507  0.41369666  0.8309935
## 342  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 343 -2.270468418 -1.606350954 -0.660461443 -1.89091256 -2.34294128 -1.5559027
```

```
## 344  0.315024376  0.837407985 -0.503968569 -0.75709896  1.15060579  0.8309935
## 345 -0.258981089  0.276012054  0.090876526  0.13153560 -0.87684411  0.8309935
## 346 -2.442415059 -1.624404077 -1.474953300 -2.13763143 -1.23172706 -2.1526268
## 347 -0.779627057  0.028839379 -0.460969895  1.01940025  0.41369666 -0.3624546
## 348  0.500223272  0.343062637 -0.503968569 -1.61349984  0.41369666  0.2342694
## 349 -2.140663114 -2.439418291 -1.474953300 -1.49417590 -1.59053934 -1.5559027
## 350 -3.038377860 -2.125195033 -1.410858109 -1.89091256 -1.60598154 -1.5559027
## 351 -2.640866211 -2.668537843 -1.310265426 -1.24976678 -1.98802935 -2.1526268
## 352  0.315024376  0.343062637 -0.284321807  0.34525086 -1.79703075  0.2342694
## 353  0.315024376 -1.558637197  0.477093769 -0.26520107  0.41369666 -0.3624546
## 354 -2.844732753 -2.396866438 -1.640582478 -1.18529940 -2.16353514 -1.5559027
## 355 -2.352975866 -2.396866438 -1.222385471 -1.92314625 -1.42277627 -2.1526268
## 356  0.870621065  1.084580660  1.404138522  1.01940025 -0.15928489  0.8309935
## 357  0.870621065  0.343062637  1.404138522  1.01940025  1.15060579  0.8309935
## 358  0.870621065  1.084580660  0.665163587  1.01940025  0.77632969  0.8309935
## 359  0.870621065  0.343062637  1.404138522 -1.00304791  1.15060579  0.8309935
## 360 -1.139803415 -0.242832025 -0.515928783 -0.51038010 -0.67422407  0.2342694
## 361  0.161745380  0.343062637  1.404138522 -2.81178082 -1.79703075  0.2342694
## 362 -0.319790071 -1.341125158  0.311464591 -0.29743475  1.15060579 -0.3624546
## 363  0.685422169  0.276012054  0.311464591 -0.29743475  0.58920245 -0.3624546
## 364 -0.769405621 -2.149693764  0.046936548 -1.00304791  0.23041916 -0.3624546
## 365  0.203886717  0.276012054  0.101895436  1.01940025  0.42533972  0.2342694
## 366  0.870621065 -0.242832025  0.068435885  0.80568499  0.60469526  0.8309935
## 367 -4.049458995 -3.766830976 -3.164354932 -3.02549608 -3.27084902 -2.7493508
## 368  0.870621065  0.343062637  1.404138522  1.01940025  1.15060579 -0.9591787
## 369  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 370  0.315024376 -1.207023991 -0.504909872  0.34525086 -0.12444217  0.2342694
## 371  0.389085614  0.837407985  1.040361919 -0.08217966  0.21884832  0.8309935
## 372  0.157651711 -0.532556552 -0.306762448 -0.51038010  0.05491336  0.8309935
## 373  0.870621065 -0.218333295 -0.880108205  1.01940025  0.41369666 -0.3624546
## 374 -0.954604518 -1.341125158 -0.481527929  0.13153560 -0.13993498  0.2342694
## 375  0.870621065  1.084580660  1.404138522  1.01940025  1.15060579  0.8309935
## 376  0.870621065  0.276012054 -0.546161603  0.34525086  0.78797276 -0.3624546
## 377  0.500223272  0.028839379  0.830792764  0.37671464  0.23819086  0.2342694
## 378  0.870621065  1.084580660  0.278543524 -1.00304791  1.15060579  0.8309935
## 379 -0.134591175 -0.532556552 -0.681019477 -0.97004431 -0.32321248  0.2342694
## 380  0.639187162 -0.285383878  1.017921279  1.01940025  0.41369666  0.2342694
## 381  0.315024376 -0.779729226  0.257447007 -0.97081423 -0.32706222  0.8309935
## 382  0.870621065  0.837407985  0.268868737 -0.29666484 -0.66645236 -0.3624546
## 383 -0.932906052 -0.645628060  1.050439526  1.01940025  0.78410140  0.8309935
## 384  0.870621065  0.028839379 -0.890185812 -1.40132441  0.41369666 -0.3624546
## 385  0.870621065  1.084580660  1.404138522  1.01940025 -0.18638440 -0.3624546
## 386  0.620519517  0.276012054  0.103239559  0.37748455  0.04719226 -0.3624546
## 387  0.870621065  0.276012054  0.642722946  0.13076569 -0.32321248 -0.3624546
## 388  0.500223272  0.028839379  0.641781643  0.34525086  0.97510000  0.8309935
## 389 -0.788073267  0.837407985  1.404138522  1.01940025  0.05106362  0.8309935
## 390  0.870621065  1.084580660 -0.274244200 -2.07316405  0.59697416 -0.3624546
## 391 -0.769405621 -0.532556552 -0.118692629 -0.32889853 -0.87684411 -0.3624546
## 392  0.870621065 -1.341125158  1.404138522  1.01940025  0.96347855  0.8309935
## 393  0.453988266  0.837407985  1.216068704  0.16145954  1.15060579  0.8309935
## 394 -0.648046527 -1.341125158 -0.880108205 -0.32889853 -1.06012161 -0.9591787
## 395 -1.510201208  0.028839379 -0.670539050 -1.15229580  0.41369666 -0.3624546
## 396  0.685422169  1.084580660 -0.118692629 -0.51115002 -0.13221388  0.2342694
## 397  0.050607722 -0.779729226 -0.493890962 -0.54261379 -0.69356661 -0.3624546
## 398  0.453988266  0.276012054  0.642722946  0.55973604  0.23434112 -0.3624546
## 399 -0.616126626 -0.532556552  0.235006366  0.34525086 -0.32321248  0.2342694
## 400  0.050607722  0.276012054 -0.880108205  1.01940025  0.41369666  0.2342694
## 401  0.870621065  1.084580660  0.907250989  1.01940025  1.15060579  0.8309935
## 402  0.870621065 -0.532556552 -0.880108205  0.59119981 -0.32321248 -0.3624546
## 403 -2.515154577 -1.341125158 -0.901607542 -0.97081423 -0.68199577 -0.9591787
## 404  0.870621065  0.343062637 -0.062845564  1.01940025  1.15060579  0.8309935
## 405  0.235806619  0.276012054 -0.878764082 -0.29666484 -1.60603215 -0.9591787
##          REP*POL
## 1   -1.105791441
## 2   -0.156185722
## 3   -0.288614189
## 4   -0.369746837
## 5   -0.269671799
## 6   -0.531413764
```

```
## 7   -0.052504349
## 8   -0.125027647
## 9   -0.489090647
## 10  -0.046876285
## 11   0.874579660
## 12  -0.107990635
## 13   0.728907869
## 14  -0.952811686
## 15   0.119374064
## 16   0.874579660
## 17  -0.391479404
## 18  -0.242664367
## 19   0.036059306
## 20  -0.311370463
## 21   0.874579660
## 22  -0.201006988
## 23  -0.508330553
## 24   0.624934743
## 25  -0.358223222
## 26  -0.311370463
## 27   0.874579660
## 28   0.874579660
## 29   0.197665774
## 30  -1.391037128
## 31  -1.250211515
## 32   0.874579660
## 33  -0.052499175
## 34   0.047505027
## 35  -1.250211515
## 36  -0.173855353
## 37   0.874579660
## 38   1.071986826
## 39  -0.819680181
## 40  -0.952811686
## 41   0.375289826
## 42   0.166315935
## 43   0.015499556
## 44   0.874579660
## 45  -0.046876285
## 46  -0.937264498
## 47  -0.619372782
## 48   0.926866229
## 49  -7.022449097
## 50   0.595373008
## 51   0.035115343
## 52  -1.042077016
## 53  -0.506944089
## 54   0.874579660
## 55  -0.541947790
## 56   0.228065606
## 57  -1.208298478
## 58   0.047505027
## 59   2.931363782
## 60  -0.392671506
## 61   0.195089952
## 62   0.874579660
## 63  -1.711085696
## 64   0.874579660
## 65  -4.083266415
## 66  -0.798565546
## 67  -0.024884245
## 68  -0.046876285
## 69  -1.332177574
## 70  -0.222104617
## 71  -0.201006988
## 72   0.001112547
## 73  -0.213929295
## 74   0.166315935
## 75  -0.036271059
```

```
## 76   0.036059306
## 77   0.062342809
## 78  -0.531413764
## 79   0.306589937
## 80   0.917740685
## 81  -0.106741113
## 82  -0.521388040
## 83  -0.490073266
## 84  -0.696617152
## 85   0.874579660
## 86   0.146209039
## 87  -0.935652834
## 88  -0.182020867
## 89   0.874579660
## 90  -0.337581336
## 91  -0.184324055
## 92   0.874579660
## 93   0.083946244
## 94   0.023058127
## 95   0.874579660
## 96   0.728907869
## 97  -0.381314753
## 98  -0.228916582
## 99  -0.500828290
## 100  1.007711165
## 101 -0.635831532
## 102  0.036959704
## 103  0.874579660
## 104  0.874579660
## 105  0.874579660
## 106  0.312636956
## 107  0.627662133
## 108 -0.433326669
## 109 -0.310880502
## 110 -0.316033888
## 111  0.153510717
## 112  0.874579660
## 113 -0.419945255
## 114 -0.024884245
## 115 -0.558258545
## 116 -0.952811686
## 117 -1.211338175
## 118 -1.157165769
## 119  0.265449211
## 120  0.020644144
## 121  0.331423964
## 122  0.624934743
## 123  0.199440964
## 124  0.288220028
## 125 -0.374672564
## 126 -0.260068505
## 127 -1.193290917
## 128  0.016949893
## 129  0.627662133
## 130 -1.462707180
## 131  0.036959704
## 132 -0.228891308
## 133  0.241022943
## 134  0.047505027
## 135  0.228065606
## 136  0.874579660
## 137 -1.597452626
## 138 -1.021251207
## 139  0.917740685
## 140 -0.053016903
## 141  0.874579660
## 142 -0.343681237
## 143 -0.451982882
## 144  0.064852033
```

```
## 145 -0.952811686
## 146 -0.079594482
## 147  0.922633361
## 148 -2.560750239
## 149 -0.839675170
## 150  0.148744882
## 151 -0.102248375
## 152 -0.952811686
## 153 -0.609946521
## 154  0.166315935
## 155 -0.490073266
## 156  0.884741120
## 157 -0.039347130
## 158  2.516531568
## 159  0.071136949
## 160  0.437564287
## 161  0.265449211
## 162  2.607191943
## 163 -0.007013526
## 164  0.874579660
## 165 -0.081066069
## 166  1.964578788
## 167  0.774694654
## 168  2.047896198
## 169  0.133444191
## 170 -0.623289842
## 171 -0.201006988
## 172  0.760871051
## 173  0.686368948
## 174  0.994926444
## 175  0.113051041
## 176 -0.841769092
## 177  1.552687452
## 178  4.673987146
## 179 -0.501868652
## 180  0.055713277
## 181  1.791898677
## 182  1.355917297
## 183 -0.531046524
## 184 -0.145122876
## 185  0.921910984
## 186  0.874579660
## 187 -0.676002504
## 188  0.874579660
## 189 -0.371537013
## 190  0.337583580
## 191  0.151624255
## 192  0.874579660
## 193 -2.380808518
## 194 -0.375839168
## 195 -0.046876285
## 196  0.166315935
## 197 -1.309950131
## 198 -0.715121640
## 199  0.874579660
## 200 -1.158838071
## 201  0.874579660
## 202 -0.952811686
## 203  0.175800032
## 204 -0.327475124
## 205  0.874579660
## 206 -0.501473921
## 207 -1.142078309
## 208  0.119374064
## 209  0.874579660
## 210  1.681508921
## 211 -0.324065450
## 212 -0.952811686
## 213 -0.356624880
```

```
## 214  0.874579660
## 215 -0.952811686
## 216 -0.210549733
## 217 -0.581951821
## 218 -0.541947790
## 219 -0.483424932
## 220 -0.453389309
## 221  0.874579660
## 222 -0.217254821
## 223  0.804294685
## 224 -0.010534571
## 225 -0.394853207
## 226 -1.585856772
## 227  0.337583580
## 228 -2.123293300
## 229  0.874579660
## 230  0.874579660
## 231 -0.210549733
## 232  0.252505569
## 233 -0.478645690
## 234  0.106019922
## 235 -1.250211515
## 236  1.796652931
## 237 -1.530421033
## 238 -0.467514677
## 239  0.150434647
## 240 -0.541947790
## 241  0.047505027
## 242 -0.331222848
## 243 -0.937219906
## 244 -1.082936289
## 245 -0.582618816
## 246  0.072451651
## 247  0.321955847
## 248  0.506214461
## 249  0.493090891
## 250  0.874579660
## 251  0.036959704
## 252 -3.389333481
## 253  0.806854897
## 254  0.663984023
## 255 -0.564944387
## 256  0.874579660
## 257 -0.382749369
## 258 -0.527425662
## 259 -1.005960009
## 260  0.306589937
## 261 -0.952811686
## 262 -0.671288429
## 263 -0.550442794
## 264 -1.186909415
## 265 -0.377283061
## 266 -0.848532329
## 267 -0.952811686
## 268 -0.447299348
## 269  0.874579660
## 270  0.004892677
## 271  0.874579660
## 272  0.119374064
## 273  0.874579660
## 274 -0.201006988
## 275 -0.036271059
## 276  0.874579660
## 277 -0.499073182
## 278 -4.083266415
## 279 -0.201006988
## 280 -3.338616336
## 281  0.166315935
## 282  0.874579660
```

```
## 283  0.874579660
## 284 -0.921074910
## 285  0.183337440
## 286  0.874579660
## 287 -0.587715769
## 288  0.874579660
## 289 -0.952811686
## 290  0.951204529
## 291  0.602715508
## 292  0.380162393
## 293 -0.952811686
## 294  0.951204529
## 295  0.582429366
## 296  0.874579660
## 297 -0.366210376
## 298 -0.217254821
## 299  0.145251498
## 300  0.036059306
## 301 -0.466370928
## 302  0.874579660
## 303  1.907754960
## 304  0.874579660
## 305 -0.952811686
## 306 -0.279324677
## 307  0.874579660
## 308  0.874579660
## 309 -0.284833874
## 310 -0.171564479
## 311  0.874579660
## 312  0.728907869
## 313 -0.619372782
## 314 -0.489756385
## 315  0.728907869
## 316  0.051830456
## 317 -0.979923443
## 318 -0.201006988
## 319  0.036959704
## 320 -0.201006988
## 321  0.294223228
## 322 -0.605249890
## 323  0.874579660
## 324  0.874579660
## 325 -0.733533299
## 326  0.624934743
## 327 -0.380667347
## 328  1.251179590
## 329  0.874579660
## 330  0.874579660
## 331 -0.952811686
## 332  0.874579660
## 333 -1.002164317
## 334 -0.197312207
## 335  0.510243447
## 336 -0.952811686
## 337  0.807432201
## 338  0.451144586
## 339 -0.876171907
## 340  0.158390815
## 341  0.728907869
## 342  0.874579660
## 343 -1.499506574
## 344  0.627662133
## 345 -0.339489447
## 346 -1.159850328
## 347 -1.936506789
## 348  0.287060656
## 349  2.076906376
## 350  1.913660802
## 351  0.278118763
```

```
## 352 -0.329294229
## 353  0.047505027
## 354  1.242096340
## 355  0.665142220
## 356  0.874579660
## 357  0.874579660
## 358  0.874579660
## 359 -1.250211515
## 360  0.208908395
## 361  3.092020784
## 362 -0.102351374
## 363 -0.188669229
## 364 -0.433326669
## 365  0.398580716
## 366  0.624934743
## 367  6.057539964
## 368  0.874579660
## 369  0.874579660
## 370 -0.329294229
## 371 -0.392671506
## 372 -1.116973859
## 373  0.874579660
## 374 -0.564445585
## 375  0.874579660
## 376  0.166315935
## 377 -0.182256291
## 378 -1.250211515
## 379 -0.161554644
## 380  0.951204529
## 381  0.781908273
## 382 -0.478645690
## 383 -2.215713441
## 384 -1.270306744
## 385  0.874579660
## 386  0.402460703
## 387  0.020644144
## 388 -0.164090841
## 389 -0.655949765
## 390 -2.290489848
## 391 -0.500828290
## 392  0.874579660
## 393 -0.189033698
## 394 -0.163995109
## 395  2.461884898
## 396 -0.303683794
## 397 -0.628981818
## 398  0.091646707
## 399 -0.414199208
## 400  0.119374064
## 401  0.874579660
## 402  0.479262952
## 403 -1.459593543
## 404  0.874579660
## 405 -0.711418684
```

iii) Regression coefficients of paths between factors

```
summary(sec_pls)$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(sec_pls, nboot = 1000)
```

```
## Bootstrapping model using seminr...
```

```
## SEMinR Model successfully bootstrapped
```

```
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          0.241        0.057   4.359   0.122
## INV  ->  SEC             0.181          0.188        0.057   3.165   0.076
## POL  ->  SEC             0.339          0.343        0.054   6.245   0.229
## FAML  ->  SEC            0.011          0.008        0.056   0.189  -0.099
## REP*POL  ->  SEC        -0.105         -0.030        0.122  -0.856  -0.198
## SEC  ->  TRUST           0.606          0.609        0.035  17.435   0.541
##                 97.5% CI
## REP  ->  SEC        0.350
## INV  ->  SEC        0.301
## POL  ->  SEC        0.449
## FAML  ->  SEC       0.112
## REP*POL  ->  SEC    0.185
## SEC  ->  TRUST      0.678
##
## Bootstrapped Weights:
##                          Original Est. Bootstrap Mean Bootstrap SD T Stat.
## PREP1  ->  REP                   0.215          0.213        0.026   8.250
## PREP2  ->  REP                   0.334          0.334        0.018  18.216
## PREP3  ->  REP                   0.349          0.348        0.022  15.828
## PREP4  ->  REP                   0.287          0.288        0.025  11.514
## PINV1  ->  INV                   0.363          0.364        0.025  14.407
## PINV2  ->  INV                   0.395          0.394        0.026  14.938
## PINV3  ->  INV                   0.358          0.358        0.027  13.505
## PSEC1  ->  SEC                   0.277          0.278        0.015  18.003
## PSEC2  ->  SEC                   0.315          0.314        0.017  18.362
## PSEC3  ->  SEC                   0.307          0.308        0.016  18.665
## PSEC4  ->  SEC                   0.292          0.291        0.017  16.694
## PPSS1  ->  POL                   0.360          0.358        0.022  16.204
## PPSS2  ->  POL                   0.395          0.396        0.023  17.216
## PPSS3  ->  POL                   0.367          0.368        0.018  20.093
## TRST1  ->  TRUST                 0.282          0.282        0.014  19.718
## TRST2  ->  TRUST                 0.280          0.281        0.015  18.603
## TRST3  ->  TRUST                 0.286          0.286        0.016  17.941
## TRST4  ->  TRUST                 0.278          0.278        0.020  13.776
## FAML1  ->  FAML                  1.000          1.000        0.000       .
## PREP1*PPSS1  ->  REP*POL         0.239          0.109        0.160   1.490
## PREP1*PPSS2  ->  REP*POL         0.031          0.064        0.089   0.353
## PREP1*PPSS3  ->  REP*POL         0.021          0.061        0.115   0.184
## PREP2*PPSS1  ->  REP*POL         0.046          0.080        0.109   0.419
## PREP2*PPSS2  ->  REP*POL        -0.104          0.040        0.158  -0.662
## PREP2*PPSS3  ->  REP*POL        -0.228          0.021        0.237  -0.964
## PREP3*PPSS1  ->  REP*POL        -0.341         -0.023        0.300  -1.136
## PREP3*PPSS2  ->  REP*POL         0.095          0.090        0.133   0.713
## PREP3*PPSS3  ->  REP*POL         0.108          0.095        0.134   0.811
## PREP4*PPSS1  ->  REP*POL         0.443          0.147        0.279   1.589
## PREP4*PPSS2  ->  REP*POL         0.382          0.121        0.261   1.462
## PREP4*PPSS3  ->  REP*POL         0.271          0.106        0.178   1.527
##                          2.5% CI 97.5% CI
## PREP1  ->  REP             0.157    0.256
## PREP2  ->  REP             0.302    0.377
## PREP3  ->  REP             0.306    0.392
## PREP4  ->  REP             0.244    0.340
## PINV1  ->  INV             0.318    0.415
## PINV2  ->  INV             0.344    0.450
## PINV3  ->  INV             0.308    0.412
## PSEC1  ->  SEC             0.249    0.309
## PSEC2  ->  SEC             0.281    0.348
## PSEC3  ->  SEC             0.276    0.342
## PSEC4  ->  SEC             0.257    0.324
## PPSS1  ->  POL             0.314    0.401
## PPSS2  ->  POL             0.355    0.444
## PPSS3  ->  POL             0.328    0.403
## TRST1  ->  TRUST           0.254    0.310
```

```
## TRST2  ->  TRUST           0.252    0.310
## TRST3  ->  TRUST           0.254    0.315
## TRST4  ->  TRUST           0.240    0.318
## FAML1  ->  FAML            1.000    1.000
## PREP1*PPSS1  ->  REP*POL  -0.226    0.416
## PREP1*PPSS2  ->  REP*POL  -0.143    0.219
## PREP1*PPSS3  ->  REP*POL  -0.192    0.264
## PREP2*PPSS1  ->  REP*POL  -0.181    0.261
## PREP2*PPSS2  ->  REP*POL  -0.312    0.321
## PREP2*PPSS3  ->  REP*POL  -0.430    0.452
## PREP3*PPSS1  ->  REP*POL  -0.594    0.601
## PREP3*PPSS2  ->  REP*POL  -0.240    0.340
## PREP3*PPSS3  ->  REP*POL  -0.239    0.318
## PREP4*PPSS1  ->  REP*POL  -0.465    0.591
## PREP4*PPSS2  ->  REP*POL  -0.430    0.564
## PREP4*PPSS3  ->  REP*POL  -0.321    0.409
##
## Bootstrapped Loadings:
##                          Original Est. Bootstrap Mean Bootstrap SD T Stat.
## PREP1  ->  REP                   0.800          0.798        0.040  20.081
## PREP2  ->  REP                   0.913          0.913        0.015  59.238
## PREP3  ->  REP                   0.908          0.908        0.020  45.109
## PREP4  ->  REP                   0.718          0.719        0.033  21.808
## PINV1  ->  INV                   0.903          0.904        0.024  37.283
## PINV2  ->  INV                   0.925          0.924        0.022  41.912
## PINV3  ->  INV                   0.855          0.855        0.026  33.275
## PSEC1  ->  SEC                   0.813          0.814        0.026  31.827
## PSEC2  ->  SEC                   0.865          0.865        0.025  34.370
## PSEC3  ->  SEC                   0.868          0.869        0.021  40.660
## PSEC4  ->  SEC                   0.807          0.806        0.026  31.247
## PPSS1  ->  POL                   0.868          0.865        0.024  35.824
## PPSS2  ->  POL                   0.893          0.894        0.014  63.326
## PPSS3  ->  POL                   0.911          0.911        0.016  55.753
## TRST1  ->  TRUST                 0.900          0.900        0.015  59.150
## TRST2  ->  TRUST                 0.909          0.910        0.020  46.451
## TRST3  ->  TRUST                 0.905          0.904        0.021  42.450
## TRST4  ->  TRUST                 0.838          0.838        0.031  27.232
## FAML1  ->  FAML                  1.000          1.000        0.000       .
## PREP1*PPSS1  ->  REP*POL         0.581          0.586        0.271   2.146
## PREP1*PPSS2  ->  REP*POL         0.510          0.559        0.258   1.978
## PREP1*PPSS3  ->  REP*POL         0.506          0.572        0.272   1.860
## PREP2*PPSS1  ->  REP*POL         0.509          0.607        0.292   1.746
## PREP2*PPSS2  ->  REP*POL         0.421          0.566        0.306   1.376
## PREP2*PPSS3  ->  REP*POL         0.336          0.563        0.354   0.947
## PREP3*PPSS1  ->  REP*POL         0.236          0.464        0.349   0.675
## PREP3*PPSS2  ->  REP*POL         0.555          0.607        0.291   1.909
## PREP3*PPSS3  ->  REP*POL         0.466          0.583        0.311   1.495
## PREP4*PPSS1  ->  REP*POL         0.900          0.608        0.355   2.538
## PREP4*PPSS2  ->  REP*POL         0.836          0.523        0.347   2.411
## PREP4*PPSS3  ->  REP*POL         0.859          0.576        0.327   2.626
##                          2.5% CI 97.5% CI
## PREP1  ->  REP             0.710    0.865
## PREP2  ->  REP             0.881    0.940
## PREP3  ->  REP             0.858    0.940
## PREP4  ->  REP             0.654    0.777
## PINV1  ->  INV             0.852    0.946
## PINV2  ->  INV             0.875    0.958
## PINV3  ->  INV             0.797    0.898
## PSEC1  ->  SEC             0.763    0.862
## PSEC2  ->  SEC             0.811    0.906
## PSEC3  ->  SEC             0.823    0.908
## PSEC4  ->  SEC             0.748    0.854
## PPSS1  ->  POL             0.810    0.904
## PPSS2  ->  POL             0.865    0.919
## PPSS3  ->  POL             0.873    0.938
## TRST1  ->  TRUST           0.869    0.927
## TRST2  ->  TRUST           0.864    0.941
## TRST3  ->  TRUST           0.855    0.938
## TRST4  ->  TRUST           0.772    0.893
```

```
## FAML1  ->  FAML            1.000    1.000
## PREP1*PPSS1  ->  REP*POL  -0.047    0.926
## PREP1*PPSS2  ->  REP*POL  -0.064    0.886
## PREP1*PPSS3  ->  REP*POL  -0.096    0.899
## PREP2*PPSS1  ->  REP*POL  -0.144    0.947
## PREP2*PPSS2  ->  REP*POL  -0.204    0.918
## PREP2*PPSS3  ->  REP*POL  -0.315    0.969
## PREP3*PPSS1  ->  REP*POL  -0.338    0.920
## PREP3*PPSS2  ->  REP*POL  -0.132    0.936
## PREP3*PPSS3  ->  REP*POL  -0.239    0.947
## PREP4*PPSS1  ->  REP*POL  -0.304    0.973
## PREP4*PPSS2  ->  REP*POL  -0.376    0.910
## PREP4*PPSS3  ->  REP*POL  -0.285    0.934
##
## Bootstrapped HTMT:
##                    Original Est. Bootstrap Mean Bootstrap SD 2.5% CI 97.5% CI
## REP  ->  INV               0.705          0.704        0.048   0.600    0.788
## REP  ->  POL               0.543          0.544        0.054   0.429    0.643
## REP  ->  FAML              0.599          0.599        0.053   0.487    0.692
## REP  ->  REP*POL           0.000          0.000        0.000   0.000    0.000
## REP  ->  SEC               0.595          0.592        0.045   0.498    0.674
## REP  ->  TRUST             0.682          0.679        0.042   0.594    0.754
## INV  ->  POL               0.498          0.498        0.058   0.381    0.606
## INV  ->  FAML              0.494          0.490        0.055   0.381    0.603
## INV  ->  REP*POL           0.085          0.106        0.034   0.055    0.186
## INV  ->  SEC               0.568          0.569        0.047   0.478    0.657
## INV  ->  TRUST             0.563          0.562        0.051   0.461    0.658
## POL  ->  FAML              0.596          0.593        0.050   0.489    0.681
## POL  ->  REP*POL           0.000          0.000        0.000   0.000    0.000
## POL  ->  SEC               0.622          0.622        0.052   0.513    0.713
## POL  ->  TRUST             0.458          0.461        0.059   0.343    0.571
## FAML  ->  REP*POL          0.046          0.066        0.025   0.032    0.125
## FAML  ->  SEC              0.455          0.451        0.051   0.351    0.546
## FAML  ->  TRUST            0.471          0.470        0.053   0.360    0.567
## REP*POL  ->  SEC           0.059          0.083        0.019   0.051    0.126
## REP*POL  ->  TRUST         0.044          0.072        0.017   0.046    0.111
## SEC  ->  TRUST             0.685          0.686        0.036   0.615    0.756
##
## Bootstrapped Total Paths:
##                    Original Est. Bootstrap Mean Bootstrap SD 2.5% CI 97.5% CI
## REP  ->  SEC               0.247          0.241        0.057   0.122    0.350
## REP  ->  TRUST             0.150          0.147        0.037   0.073    0.223
## INV  ->  SEC               0.181          0.188        0.057   0.076    0.301
## INV  ->  TRUST             0.109          0.114        0.035   0.046    0.183
## POL  ->  SEC               0.339          0.343        0.054   0.229    0.449
## POL  ->  TRUST             0.205          0.209        0.035   0.136    0.276
## FAML  ->  SEC              0.011          0.008        0.056  -0.099    0.112
## FAML  ->  TRUST            0.006          0.005        0.034  -0.061    0.071
## REP*POL  ->  SEC          -0.105         -0.030        0.122  -0.198    0.185
## REP*POL  ->  TRUST        -0.063         -0.018        0.075  -0.121    0.112
## SEC  ->  TRUST             0.606          0.609        0.035   0.541    0.678
```

Question 2) Common-Factor Models using CB-SEM

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

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

```
sec_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

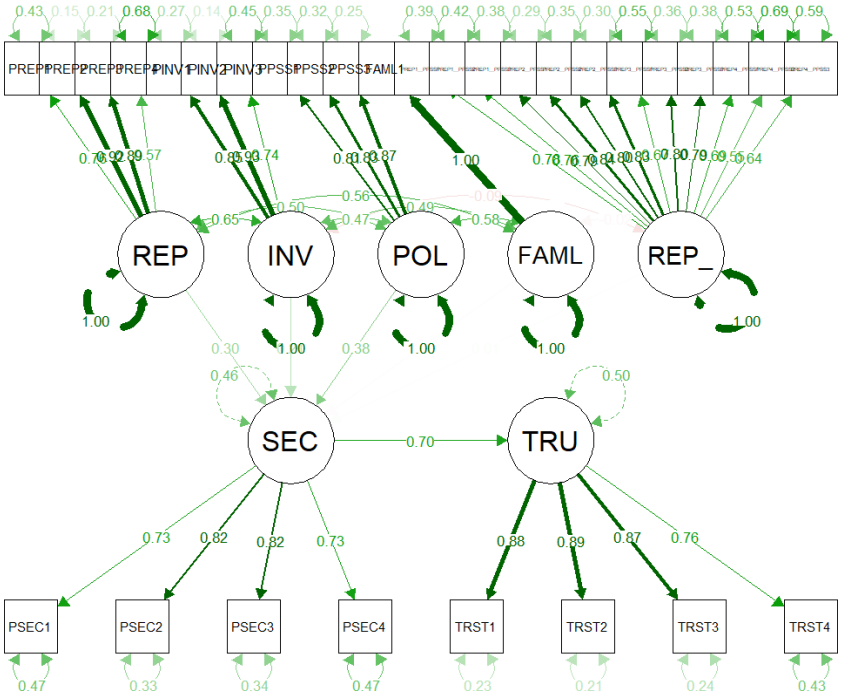
i) Plot a figure of the estimated model

```
sec_pls_reflective <- estimate_cbsem(data = sq,
  measurement_model = sec_mm_reflective,
  structural_model = sec_sm)
```

```
## Generating the seminr model for CBSEM
```

```
plot(sec_pls_reflective)
```

```
## Plotting of lavaan models using semPlot.
```




```
## NULL
```

ii) loadings of composites

```
sec_pls_rfsum<-summary(sec_pls_reflective)
sec_pls_rfsum$loadings
```

```
## $coefficients
##            REP       INV       SEC       POL     TRUST 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
## PPSS1        NA        NA        NA 0.8051533        NA   NA
## PPSS2        NA        NA        NA 0.8272576        NA   NA
## PPSS3        NA        NA        NA 0.8674335        NA   NA
## TRST1        NA        NA        NA        NA 0.8800240   NA
## TRST2        NA        NA        NA        NA 0.8886342   NA
## TRST3        NA        NA        NA        NA 0.8690644   NA
## TRST4        NA        NA        NA        NA 0.7575988   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
## 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
## TRUST -> TRST1                  0.8800240 0.02272092 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 0.04846748 0.000000e+00 0.6626042
## 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 0.12948899 1.967998e-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
## POL -> PPSS1                 0.8905156
```

```
## POL -> PPSS2               0.8822771
## POL -> PPSS3               0.9315961
## TRUST -> TRST1             0.9245562
## TRUST -> TRST2             0.9539164
## TRUST -> TRST3             0.9425522
## TRUST -> TRST4             0.8525933
## 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_pls_rfsum$paths
```

```
## $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
##
## $significance
##                   Std Estimate         SE      t-Value     2.5% CI   97.5% CI
## SEC -> REP         0.299536782 0.07273355 3.817181e-05  0.15698165 0.44209191
## SEC -> INV         0.214253245 0.07345058 3.534482e-03  0.07029275 0.35821374
## SEC -> POL         0.376401499 0.06413246 4.380974e-09  0.25070419 0.50209881
## SEC -> FAML       -0.008837653 0.07010617 8.996836e-01 -0.14624321 0.12856791
## SEC -> REP_x_POL   0.008355287 0.04468802 8.516847e-01 -0.07923162 0.09594219
## TRUST -> SEC       0.703639369 0.03721630 0.000000e+00  0.63069677 0.77658197
```