Psychometrics Assignment2

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0. Preparation

```
## load the necessary packages
library(ltm)
library(dplyr)
library(tidyr)
library(knitr)
library(kableExtra)

## load data
dat <- read.table("Assign2.dat")
head(dat); dim(dat)
```

```
  V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V11 V12 V13 V14 V15
1  0  0  0  1  1  1  1  0  1   1   1   0   0   0   1
2  0  0  1  0  0  1  1  1  1   1   0   0   0   0   0
3  0  0  0  0  1  0  0  0  0   1   1   0   0   0   0
4  0  0  1  0  0  1  0  0  0   0   1   0   0   0   0
5  0  0  0  0  0  0  0  0  0   0   0   0   0   0   0
6  0  1  1  1  1  1  1  1  1   1   1   1   1   1   1

[1] 2000   15
```

1. Fixed effects Rasch model

1a. Fit the fixed effects Rasch model to the data.

```
## First, remove the cases of zero score and perfect score
cleaned_dat <- dat[-(which(rowSums(dat) == 0 | rowSums(dat) ==15)),]

## Check if there is any item with zero variance (either all zero or all one)
colSums(dat) == 0  # no item with zero variance
```

```
   V1    V2    V3    V4    V5    V6    V7    V8    V9   V10   V11   V12   V13
FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE
  V14   V15
FALSE FALSE
```

```
colSums(dat) == 2000 # no item with zero variance
```

```
   V1    V2    V3    V4    V5    V6    V7    V8    V9   V10   V11   V12   V13
FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE
  V14   V15
FALSE FALSE
```

```
## Check the sample size of the cleaned data and assign it to n
n <- nrow(cleaned_dat); n
```

```
[1] 1569
```

```
## Add the person factor to the data
cleaned_dat$pf <- factor(1:n)

## Check the data again
head(cleaned_dat)
```

```
  V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V11 V12 V13 V14 V15 pf
1  0  0  0  1  1  1  1  0  1   1   1   0   0   0   1  1
2  0  0  1  0  0  1  1  1  1   1   0   0   0   0   0  2
3  0  0  0  0  1  0  0  0  0   1   1   0   0   0   0  3
4  0  0  1  0  0  1  0  0  0   0   1   0   0   0   0  4
6  0  1  1  1  1  1  1  1  1   1   1   1   1   1   1  5
8  0  0  0  0  0  0  0  0  1   0   1   0   0   0   0  6
```

```
## Convert the data to a long format
longdat <- gather(cleaned_dat, item, score, V1:V15, factor_key=TRUE)
head(longdat)
```

```
  pf item score
1  1   V1     0
2  2   V1     0
3  3   V1     0
4  4   V1     0
5  5   V1     0
6  6   V1     0
```

```
## Fit the fixed effects Rasch model to the data by fitting the logistic regression
fixed.Rasch <- glm(score ~ pf + item, family = "binomial", data =longdat)
```

```
## Summary of the fixed effects Rasch model(in Appendix)
summary(fixed.Rasch)
```

Note: The model output (summary) can be found in the *Appendix* at the end of the document.

```r
## Extract the parameter estimates
parameters <- coef(fixed.Rasch)

## Store the person factors as "theta" and item factors as "difficulty"
theta <- parameters[1:1569] # person factor
difficulty <- parameters[1570:1583] # item factor

## Calculate the estimates under the usual parametrization of the fixed effect Rasch model
# The first person factor (intercept) is the reference.
# The rest of person factor estimates are the difference from the reference person factor.
# In order to get the original person factor estimates,
# we need to add this reference value to the rest.
theta <- as.data.frame(c(theta[1], theta[-1] + theta[1]))

# Set the sum of the difficulty parameters to be equal to zero (usual identification constraint)
difficulty <- scale(difficulty, center = TRUE)
```

1b. Create a table with as many rows as there are unweighted total scores and put the total scores in the first column.

```r
## Create a dataframe named "table" that contains unweighted total scores
table <- data.frame(unweighted.total.scores = 0:15)
## Create a table just with the unweighted total scores
kable(table, col.names ="unweighted total score", align = "c", booktab=T, linesep = "")%>%
  row_spec(0,bold=TRUE) %>% kable_styling(position="center",font_size = 11,
                                          latex_options="hold_position")
```

unweighted total score
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

1c. Add a second column with the corresponding joint maximum likelihood estimates of the person parameters.

```
## Get the person factor estimates for each of the unweighted total score
# First, store the sorted total scores in "sorted.totalscores"
sorted.totalscores <- sort(unique(rowSums(cleaned_dat[,-16])))

# Then, extract the theta value for each of the total scores and store them in "fixedRaschtheta"
# (same total scores produce the same person parameter estimate)
fixedRaschtheta <- matrix(NA, 16, 1) # storage matrix
dimnames(fixedRaschtheta) <- list(0:15,"theta") # set the row/column name of matrix
for (i in seq_along(sorted.totalscores)){
  pf.index <- cleaned_dat[which(rowSums(cleaned_dat[,-16])==i),]$pf
  fixedRaschtheta[i+1,] <- unique(round(theta[pf.index,], 4))
}
## Add the person factor estimates to the dataframe "table" which is created earlier
table$pf.fixedRasch <- fixedRaschtheta

## Create a table with the unweighted total scores + joint MLE person parameter estimates
kable(table, col.names =c("unweighted total score", "fixed effects Rasch"),
      row.names = F, align = "cc", linesep = "", booktab=T) %>% row_spec(0, bold=TRUE) %>%
  kable_styling(position="center", latex_options = "HOLD_position", font_size = 11)
```

unweighted total score	fixed effects Rasch
0	NA
1	-4.2281
2	-3.3443
3	-2.7405
4	-2.2490
5	-1.8178
6	-1.4233
7	-1.0508
8	-0.6893
9	-0.3280
10	0.0453
11	0.4475
12	0.9061
13	1.4783
14	2.3382
15	NA

1d. How many examinees do not have a person parameter estimate under the fixed effects Rasch model?

There are in total 431 examinees that do not have a person parameter estimates under the fixed effects Rasch model, because they have either a zero or perfect score whose joint MLE does not exist.

```
sum(rowSums(dat) == 0 | rowSums(dat) ==15)
```

```
## [1] 431
```

2. Random effects Rasch model

2a. Fit the random effects Rasch model to the data under the assumption of a normally distributed latent variable.

```
## Fit the random effects Rasch model under the normality assumption for the latent variable
mml1 <- rasch(dat) # using 'ltm' package
```

```
## Summary of the random effects Rasch model(in Appendix)
summary(mml1)
```

Note: The model output (summary) can be found in the *Appendix* at the end of the document.

2b. Test the goodness of fit of this random effects Rasch model. Does the model fit to the data? Why?

The random effects Rasch model is tested against the more general random effects two-parameter logistic model. As the result of the likelihood ratio test is significant (p <.001), the null hypothesis model (the simpler random effects Rasch model) is rejected in favor of the alternative hypothesis model (more general two-parameter logistic model). Thus, it is concluded that the random effects Rasch model does not fit to the data well.

```
## Test the Rasch model against the two-parameter logistic model
mml2 <- ltm(dat~z1)
anova(mml1, mml2)
```

```
 Likelihood Ratio Table
          AIC      BIC   log.Lik   LRT df p.value
mml1 25515.63 25605.24 -12741.81
mml2 25454.20 25622.23 -12697.10 89.43 14  <0.001
```

2c. Add a third column to the earlier created table in 1.b. Calculate the EAP person parameter estimates under this so-called normal random effects Rasch model and put these estimates in the third column of the table.

```
## Calculate the EAP person parameter estimates using factor.scores
EAPpar <- factor.scores(mml1, method='EAP')$score.dat

# Store the sorted total scores in "sorted.total.mml"
sorted.total.mml <- unique(apply(EAPpar[,1:15], 1, sum))

# Extract the unique EAP person parameter estimates for each of the total scores
# and store them in "random.Rasch.theta"
random.Rasch.theta <- matrix(NA, 16, 1)
for (i in seq_along(sorted.total.mml)){
  z1s <- EAPpar[which(rowSums(EAPpar[,1:15])== i-1),]$z1
  random.Rasch.theta[i,] <- unique(round(z1s, 4))
}
```

```
## Add the third column to the table:
## EAP person parameter estimates under the normal random effects Rasch model
table$random.Rasch.theta <- random.Rasch.theta
kable(table, col.names =c("unweighted total score", "fixed effects Rasch",
                          "random effects Rasch"),row.names = F, align = "ccc",
      format="latex", booktab=T, linesep="") %>% row_spec(0,bold=TRUE) %>%
  kable_styling(position="center",latex_options = "HOLD_position", font_size = 11)
```

unweighted total score	fixed effects Rasch	random effects Rasch
0	NA	-1.5046
1	-4.2281	-0.9432
2	-3.3443	-0.7037
3	-2.7405	-0.5364
4	-2.2490	-0.2416
5	-1.8178	-0.0532
6	-1.4233	-0.0046
7	-1.0508	0.0258
8	-0.6893	0.1428
9	-0.3280	0.4276
10	0.0453	0.6226
11	0.4475	0.6792
12	0.9061	0.7409
13	1.4783	0.9583
14	2.3382	1.3016
15	NA	1.7365

3. Extended Rasch model

3a-1. Fit extended Rasch models to the data. Find the simplest extended Rasch model that cannot be rejected using Pearson goodness of fit test.

```
## First add a vector of ones named "fr" to the data
# (later to be filled with the observed frequency)
dat$fr <- rep(1, nrow(dat))

## Create the outcome variable: observed score pattern frequency
agg.data <- aggregate(fr~V1+V2+V3+V4+V5+V6+V7+V8+V9+V10+V11+V12+V13+V14+V15, data=dat, sum)

## Calculate y (the total scores)
y <- rowSums(agg.data[,1:15])

## Calculate the continuous covariates: c2, ..., c15
cs <- matrix(NA, 814, 14)
colnames(cs) <- c("c2","c3","c4","c5","c6","c7","c8","c9","c10",
                  "c11","c12","c13","c14","c15")
for(i in 2:15){
  cs[,i-1] <- choose(y, i)
}
## Add the calculated vectors "cs" to the aggregated data
agg.data <- cbind(agg.data, cs)
```

Note: All the summary outputs of the following extended Rasch models can be found in the *Appendix* at the end of the document.

```
## 1) Fit the extended Rasch model with all predictors
## including k main effects of item scores and k-1 main effects of covariates: c2 to c15
fit1 <- glm(fr~., family=poisson, data=agg.data)
summary(fit1) # effects of c3,...,c15 are not significant
```

```
## Assess GoF using Pearson statistic: it fits well (p = 0.884)
PS1 <- sum(residuals(fit1,type='pearson')^2)
pval1 <- pchisq(PS1, fit1$df.residual,lower.tail=F)
```

The extended Rasch model including all k main effects of item scores and k-1 main effects of covariates (`c2` to `c15`) fits to the data as $p = 0.884$. The estimation result shows that the effects of `c3`,...,`c15` are not significant. Hence, the following extended Rasch model is fitted without the main effects of `c3`,...,`c15` (only including `c2`).

```
## 2) Fit the extended Rasch model excluding the non-significant c3,...,c15
fit2 <- glm(fr~V1+V2+V3+V4+V5+V6+V7+V8+V9+V10+V11+V12+V13+V14+V15+c2,
            family=poisson, data=agg.data)
summary(fit2)
```

```
## Assess GoF using Pearson statistic: it does not fit well (p <.001)
PS2 <- sum(residuals(fit2,type='pearson')^2)
pval2 <- pchisq(PS2, fit2$df.residual,lower.tail=F)
cat("p-value =", pval2)
```

```
p-value = 7.689594e-67
```

The model excluding c3,. . . ,c15 is rejected as $p < .001$. This model does not fit to the data well. Hence, the following extended Rasch model is fitted with an additional covariate c3 (including c2 and c3).

```
## 3) Fit the extended Rasch model adding "c3" to the previous model
fit3 <- glm(fr~V1+V2+V3+V4+V5+V6+V7+V8+V9+V10+V11+V12+V13+V14+V15+c2+c3,
            family=poisson,data=agg.data)
summary(fit3)
```

```
## Assess GoF using Pearson statistic: it does not fit well (p <.001)
PS3 <- sum(residuals(fit3,type='pearson')^2)
pval3 <- pchisq(PS3, fit3$df.residual,lower.tail=F)
cat("p-value =", pval3)
```

```
p-value = 1.826385e-53
```

The model including only c2 and c3 is rejected as $p < .001$. This model does not fit to the data well. Hence, the following extended Rasch model is fitted with an additional covariate c4 (including c2, c3, and c4).

```
## 4) Fit the extended Rasch model adding "c4" to the previous model
fit4 <- glm(fr~V1+V2+V3+V4+V5+V6+V7+V8+V9+V10+V11+V12+V13+V14+V15+c2+c3+c4,
            family=poisson,data=agg.data)
summary(fit4)
```

```
## Assess GoF using Pearson statistic: it fits well (p = 0.99)
PS4 <- sum(residuals(fit4, type='pearson')^2)
pval4 <- pchisq(PS4, fit4$df.residual,lower.tail=F)
cat("p-value =", pval4)
```

```
p-value = 0.9999999
```

The model including c2, c3, and c4 is not rejected as $p = 0.99$. There is no evidence against this model. Therefore, it is concluded that the simplest extended Rasch model that cannot be rejected based on the Pearson GoF test is the one including c2, c3 and c4 (fit4 above).

3a-2. Assuming the estimates are the maximum likelihood estimates of the corresponding random effects Rasch model, calculate the EAP person parameter estimates under this simplest extended Rasch model.

```
## Calculate EAP estimate under the simplest extended Rasch model found above (fit4)

## 1) Estimates of Nus (obtained from the summary output of the model)
nu2 <- 0.893298
nu3 <- -0.258016
nu4 <- 0.046182

## 2) The first derivatives p2(alpha'x), p3(alpha'x), and p4(alpha'x),
## where alpha is a vector of 1 --> alpha'x = y (unweighted total score)
p2 <- y - (1/2)
p3 <- (1/2)*y^2 - y + 1/3
p4 <- (1/6)*y^3 - (3/4)*y^2 + (11/12)*y - (1/4)

## 3) EAP estimates are the sum of the products (estimate of nu * the first derivatives)
EAPestimates <- nu2*p2 + nu3*p3 + nu4*p4

## 4) Extract the EAP person parameter estimates for each of the total scores
## and store them in "extended.Rasch"
extended.Rasch <- matrix(NA, 16, 1)
for (i in seq_along(sort(unique(y)))){
  EAP <- EAPestimates[which(y == i-1)]
  extended.Rasch[i,] <- unique(EAP)
}
```

3a-3. Put the calculated EAP person parameter estimates in a new fourth column of the earlier created table in 1.b.

```
## Add the fourth column to the table:
## EAP person parameter estimates under the extended Rasch model
table$extended.Rasch.teta <- extended.Rasch
kable(round(table, 4), col.names =c("unweighted total score", "fixed effects Rasch",
                                    "random effects Rasch", "extended Rasch"),
      row.names = F, align = "cccc", format="latex", booktab=T, linesep="") %>%
  row_spec(0,bold=TRUE) %>% kable_styling(position="center",font_size = 11)
```

unweighted total score	fixed effects Rasch	random effects Rasch	extended Rasch
0	NA	-1.5046	-0.5442
1	-4.2281	-0.9432	0.4935
2	-3.3443	-0.7037	1.2501
3	-2.7405	-0.5364	1.7718
4	-2.2490	-0.2416	2.1047
5	-1.8178	-0.0532	2.2951
6	-1.4233	-0.0046	2.3890
7	-1.0508	0.0258	2.4328
8	-0.6893	0.1428	2.4726
9	-0.3280	0.4276	2.5545
10	0.0453	0.6226	2.7248
11	0.4475	0.6792	3.0296
12	0.9061	0.7409	3.5152
13	1.4783	0.9583	4.2276
14	2.3382	1.3016	5.2131
15	NA	1.7365	6.5179

4. Discuss the results and give an overall conclusion.

As seen in the table above, the values of the person parameter estimates differ in each model. Yet, in all three models, the person parameter estimates increase with the unweighted total score: the higher the unweighted total scores, the higher the person parameter estimates.

One thing to note is that there is no estimate for the zero and perfect total scores in the fixed effects Rasch model, as they cannot be estimated under the joint MLE procedure. In addition, given that the test is small (15 items) while the number of examinees is fairly large (n = 2000), there is a concern that the parameters might not have been estimated consistently under this fixed effects Rasch model.

Random effects Rasch model does have the estimates for the zero and perfect total scores and the marginal maximum likelihood estimates are consistent as n tends to infinity, if the model and the assumed distribution of Θ is true. Thus, the inconsistency problem of the estimator is solved in the random effects model. However, we rejected the random effects Rasch model earlier when testing against the more general two-parameter logistic model, and correspondingly concluded that the random effects Rasch model did not fit well to the data. Given that we did not reject the extended Rasch model, it is assumed that the normality assumption imposed under the random effects Rasch model (i.e., the latent variable follows a normal distribution) is problematic. It is actually often violated in practice. Hence, although in the random effects Rasch model, we don't have the problem of inconsistency in the estimator nor the problem of not being able to estimate the parameters for the zero/perfect scores, having to specify the population distribution of the latent variable can be troublesome. You might end up rejecting the model because of the misspecification of the latent variable distribution, even when the model actually fits the data.

In the extended Rasch model, we don't have the problem of misspecifying the distribution of the latent variable, since it is a (latent variable) distribution-free procedure. The only potential problem with the extended Rasch model is that it is not necessarily consistent with a latent variable, meaning that under the extended model, the likelihood function is maximized ignoring the certain inequalities that the parameters should satisfy. However, in this case, it is assumed that the estimates satisfy the inequalities and thus they are also the MLE of the random effects Rasch model. Besides the fact that the extended model does not require any distributional assumption for the latent variable (unlike the random effects Rasch model), the extended model can also

estimate the parameters for zero/perfect total scores and does not have the problem of inconsistency in the estimator, which is the drawback of the fixed effects model. Therefore, it is concluded that the extended Rasch model is the most useful and accordingly preferred over the other two models (fixed effects Rasch model and normal random effects Rasch model) that are considered here.

Appendix

Model summary of fixed effects Rasch model

```
##
## Call:
## glm(formula = score ~ pf + item, family = "binomial", data = longdat)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.2053  -0.6004  -0.2524   0.5053   3.3728
##
## Coefficients:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept) -6.893e-01  6.042e-01  -1.141 0.253917
## pf2         -7.339e-01  8.608e-01  -0.853 0.393898
## pf3         -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf4         -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf5          3.028e+00  1.236e+00   2.449 0.014306 *
## pf6         -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf7         -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf8         -7.339e-01  8.608e-01  -0.853 0.393898
## pf9         -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf10        -7.339e-01  8.608e-01  -0.853 0.393898
## pf11        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf12         3.028e+00  1.236e+00   2.449 0.014306 *
## pf13        -1.128e+00  8.773e-01  -1.286 0.198319
## pf14         2.168e+00  1.013e+00   2.140 0.032343 *
## pf15        -1.128e+00  8.773e-01  -1.286 0.198319
## pf16         2.168e+00  1.013e+00   2.140 0.032343 *
## pf17        -7.339e-01  8.608e-01  -0.853 0.393898
## pf18        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf19        -1.128e+00  8.773e-01  -1.286 0.198319
## pf20        -3.877e-13  8.480e-01   0.000 1.000000
## pf21        -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf22        -1.128e+00  8.773e-01  -1.286 0.198319
## pf23        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf24         2.168e+00  1.013e+00   2.140 0.032343 *
## pf25        -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf26         2.168e+00  1.013e+00   2.140 0.032343 *
## pf27        -1.128e+00  8.773e-01  -1.286 0.198319
## pf28         3.613e-01  8.512e-01   0.424 0.671239
## pf29         1.137e+00  8.854e-01   1.284 0.199151
## pf30        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf31         3.028e+00  1.236e+00   2.449 0.014306 *
## pf32        -2.655e+00  1.027e+00  -2.585 0.009737 **
```

```
## pf33         1.137e+00  8.854e-01   1.284 0.199151
## pf34        -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf35        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf36        -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf37        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf38         3.028e+00  1.236e+00   2.449 0.014306 *
## pf39        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf40        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf41        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf42        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf43        -7.339e-01  8.608e-01  -0.853 0.393898
## pf44        -7.339e-01  8.608e-01  -0.853 0.393898
## pf45        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf46        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf47        -4.321e-13  8.480e-01   0.000 1.000000
## pf48         1.137e+00  8.854e-01   1.284 0.199151
## pf49        -7.339e-01  8.608e-01  -0.853 0.393898
## pf50        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf51        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf52         3.028e+00  1.236e+00   2.449 0.014306 *
## pf53        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf54        -3.615e-01  8.513e-01  -0.425 0.671099
## pf55        -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf56         2.168e+00  1.013e+00   2.140 0.032343 *
## pf57        -7.339e-01  8.608e-01  -0.853 0.393898
## pf58        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf59        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf60        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf61        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf62         1.595e+00  9.280e-01   1.719 0.085576 .
## pf63         3.028e+00  1.236e+00   2.449 0.014306 *
## pf64        -7.339e-01  8.608e-01  -0.853 0.393898
## pf65        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf66        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf67        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf68        -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf69        -3.615e-01  8.513e-01  -0.425 0.671099
## pf70         2.168e+00  1.013e+00   2.140 0.032343 *
## pf71        -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf72         3.613e-01  8.512e-01   0.424 0.671239
## pf73        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf74        -7.339e-01  8.608e-01  -0.853 0.393898
## pf75        -3.174e-13  8.480e-01   0.000 1.000000
## pf76        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf77        -3.615e-01  8.513e-01  -0.425 0.671099
## pf78        -3.564e-13  8.480e-01   0.000 1.000000
```

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## pf79         1.137e+00  8.854e-01   1.284 0.199151
## pf80         2.168e+00  1.013e+00   2.140 0.032343 *
## pf81        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf82         1.595e+00  9.280e-01   1.719 0.085576 .
## pf83        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf84        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf85         3.613e-01  8.512e-01   0.424 0.671239
## pf86         7.347e-01  8.625e-01   0.852 0.394349
## pf87        -1.128e+00  8.773e-01  -1.286 0.198319
## pf88         3.028e+00  1.236e+00   2.449 0.014306 *
## pf89        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf90        -7.339e-01  8.608e-01  -0.853 0.393898
## pf91        -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf92        -7.339e-01  8.608e-01  -0.853 0.393898
## pf93        -1.128e+00  8.773e-01  -1.286 0.198319
## pf94         1.137e+00  8.854e-01   1.284 0.199151
## pf95        -7.339e-01  8.608e-01  -0.853 0.393898
## pf96        -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf97         1.137e+00  8.854e-01   1.284 0.199151
## pf98        -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf99        -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf100       -2.213e-13  8.480e-01   0.000 1.000000
## pf101        1.137e+00  8.854e-01   1.284 0.199151
## pf102       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf103       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf104       -1.128e+00  8.773e-01  -1.286 0.198319
## pf105       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf106       -1.128e+00  8.773e-01  -1.286 0.198319
## pf107        3.028e+00  1.236e+00   2.449 0.014306 *
## pf108       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf109        1.595e+00  9.280e-01   1.719 0.085576 .
## pf110       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf111        3.028e+00  1.236e+00   2.449 0.014306 *
## pf112       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf113       -1.128e+00  8.773e-01  -1.286 0.198319
## pf114        7.347e-01  8.625e-01   0.852 0.394349
## pf115       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf116        3.028e+00  1.236e+00   2.449 0.014306 *
## pf117       -3.615e-01  8.513e-01  -0.425 0.671099
## pf118        7.347e-01  8.625e-01   0.852 0.394349
## pf119        1.595e+00  9.280e-01   1.719 0.085576 .
## pf120        3.028e+00  1.236e+00   2.449 0.014306 *
## pf121       -7.339e-01  8.608e-01  -0.853 0.393898
## pf122        3.613e-01  8.512e-01   0.424 0.671239
## pf123       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf124       -1.128e+00  8.773e-01  -1.286 0.198319
```

```
## pf125       -7.339e-01  8.608e-01  -0.853 0.393898
## pf126       -1.128e+00  8.773e-01  -1.286 0.198319
## pf127        3.028e+00  1.236e+00   2.449 0.014306 *
## pf128       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf129        2.168e+00  1.013e+00   2.140 0.032343 *
## pf130       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf131       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf132       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf133       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf134        3.028e+00  1.236e+00   2.449 0.014306 *
## pf135       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf136       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf137       -3.615e-01  8.513e-01  -0.425 0.671099
## pf138       -1.128e+00  8.773e-01  -1.286 0.198319
## pf139        3.613e-01  8.512e-01   0.424 0.671239
## pf140       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf141        7.347e-01  8.625e-01   0.852 0.394349
## pf142        1.595e+00  9.280e-01   1.719 0.085576 .
## pf143       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf144       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf145        3.613e-01  8.512e-01   0.424 0.671239
## pf146        3.613e-01  8.512e-01   0.424 0.671239
## pf147        3.028e+00  1.236e+00   2.449 0.014306 *
## pf148       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf149       -7.339e-01  8.608e-01  -0.853 0.393898
## pf150       -3.615e-01  8.513e-01  -0.425 0.671099
## pf151        2.168e+00  1.013e+00   2.140 0.032343 *
## pf152       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf153       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf154       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf155       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf156       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf157        2.168e+00  1.013e+00   2.140 0.032343 *
## pf158       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf159       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf160        3.613e-01  8.512e-01   0.424 0.671239
## pf161       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf162       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf163       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf164       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf165       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf166       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf167       -7.339e-01  8.608e-01  -0.853 0.393898
## pf168        3.613e-01  8.512e-01   0.424 0.671239
## pf169       -3.615e-01  8.513e-01  -0.425 0.671099
## pf170       -2.051e+00  9.458e-01  -2.169 0.030107 *
```

```
## pf171        3.613e-01  8.512e-01   0.424 0.671239
## pf172        7.347e-01  8.625e-01   0.852 0.394349
## pf173        7.347e-01  8.625e-01   0.852 0.394349
## pf174       -3.615e-01  8.513e-01  -0.425 0.671099
## pf175       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf176       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf177       -1.128e+00  8.773e-01  -1.286 0.198319
## pf178       -1.128e+00  8.773e-01  -1.286 0.198319
## pf179       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf180       -1.128e+00  8.773e-01  -1.286 0.198319
## pf181       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf182       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf183       -1.128e+00  8.773e-01  -1.286 0.198319
## pf184       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf185       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf186        2.168e+00  1.013e+00   2.140 0.032343 *
## pf187       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf188       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf189       -1.128e+00  8.773e-01  -1.286 0.198319
## pf190       -7.339e-01  8.608e-01  -0.853 0.393898
## pf191        2.168e+00  1.013e+00   2.140 0.032343 *
## pf192       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf193        3.028e+00  1.236e+00   2.449 0.014306 *
## pf194       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf195       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf196       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf197       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf198        3.028e+00  1.236e+00   2.449 0.014306 *
## pf199       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf200       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf201       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf202       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf203       -7.339e-01  8.608e-01  -0.853 0.393898
## pf204       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf205        3.613e-01  8.512e-01   0.424 0.671239
## pf206       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf207       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf208       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf209        7.347e-01  8.625e-01   0.852 0.394349
## pf210       -7.339e-01  8.608e-01  -0.853 0.393898
## pf211       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf212       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf213       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf214       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf215        3.613e-01  8.512e-01   0.424 0.671239
## pf216       -3.539e+00  1.243e+00  -2.846 0.004426 **
```

```
## pf217       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf218        2.168e+00  1.013e+00   2.140 0.032343 *
## pf219       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf220       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf221        3.028e+00  1.236e+00   2.449 0.014306 *
## pf222       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf223       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf224        3.028e+00  1.236e+00   2.449 0.014306 *
## pf225       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf226       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf227       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf228        1.137e+00  8.854e-01   1.284 0.199151
## pf229        3.028e+00  1.236e+00   2.449 0.014306 *
## pf230        2.168e+00  1.013e+00   2.140 0.032343 *
## pf231       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf232       -7.339e-01  8.608e-01  -0.853 0.393898
## pf233       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf234        3.028e+00  1.236e+00   2.449 0.014306 *
## pf235       -7.339e-01  8.608e-01  -0.853 0.393898
## pf236       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf237       -7.339e-01  8.608e-01  -0.853 0.393898
## pf238        3.613e-01  8.512e-01   0.424 0.671239
## pf239       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf240       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf241       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf242        3.028e+00  1.236e+00   2.449 0.014306 *
## pf243       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf244       -7.339e-01  8.608e-01  -0.853 0.393898
## pf245        2.168e+00  1.013e+00   2.140 0.032343 *
## pf246       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf247        1.595e+00  9.280e-01   1.719 0.085576 .
## pf248       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf249       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf250       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf251       -7.339e-01  8.608e-01  -0.853 0.393898
## pf252       -7.339e-01  8.608e-01  -0.853 0.393898
## pf253       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf254       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf255       -1.128e+00  8.773e-01  -1.286 0.198319
## pf256       -2.850e-13  8.480e-01   0.000 1.000000
## pf257       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf258        1.595e+00  9.280e-01   1.719 0.085576 .
## pf259       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf260       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf261       -1.128e+00  8.773e-01  -1.286 0.198319
## pf262       -2.655e+00  1.027e+00  -2.585 0.009737 **
```

```
## pf263       -7.339e-01  8.608e-01  -0.853 0.393898
## pf264        1.595e+00  9.280e-01   1.719 0.085576 .
## pf265        3.028e+00  1.236e+00   2.449 0.014306 *
## pf266       -1.128e+00  8.773e-01  -1.286 0.198319
## pf267        3.613e-01  8.512e-01   0.424 0.671239
## pf268        1.595e+00  9.280e-01   1.719 0.085576 .
## pf269       -7.339e-01  8.608e-01  -0.853 0.393898
## pf270        1.595e+00  9.280e-01   1.719 0.085576 .
## pf271       -3.615e-01  8.513e-01  -0.425 0.671099
## pf272        2.168e+00  1.013e+00   2.140 0.032343 *
## pf273       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf274       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf275       -3.615e-01  8.513e-01  -0.425 0.671099
## pf276       -1.128e+00  8.773e-01  -1.286 0.198319
## pf277       -3.615e-01  8.513e-01  -0.425 0.671099
## pf278        2.168e+00  1.013e+00   2.140 0.032343 *
## pf279       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf280       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf281       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf282       -1.128e+00  8.773e-01  -1.286 0.198319
## pf283       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf284       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf285       -1.128e+00  8.773e-01  -1.286 0.198319
## pf286       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf287        3.028e+00  1.236e+00   2.449 0.014306 *
## pf288       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf289       -3.615e-01  8.513e-01  -0.425 0.671099
## pf290       -2.747e-13  8.480e-01   0.000 1.000000
## pf291       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf292       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf293       -7.339e-01  8.608e-01  -0.853 0.393898
## pf294       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf295        3.028e+00  1.236e+00   2.449 0.014306 *
## pf296       -3.615e-01  8.513e-01  -0.425 0.671099
## pf297        7.347e-01  8.625e-01   0.852 0.394349
## pf298       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf299       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf300        1.595e+00  9.280e-01   1.719 0.085576 .
## pf301       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf302       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf303       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf304        7.347e-01  8.625e-01   0.852 0.394349
## pf305       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf306       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf307        3.028e+00  1.236e+00   2.449 0.014306 *
## pf308       -7.339e-01  8.608e-01  -0.853 0.393898
```

```
## pf309       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf310       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf311       -3.615e-01  8.513e-01  -0.425 0.671099
## pf312       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf313       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf314       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf315       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf316        3.613e-01  8.512e-01   0.424 0.671239
## pf317       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf318        1.595e+00  9.280e-01   1.719 0.085576 .
## pf319       -7.339e-01  8.608e-01  -0.853 0.393898
## pf320       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf321       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf322       -7.339e-01  8.608e-01  -0.853 0.393898
## pf323       -1.128e+00  8.773e-01  -1.286 0.198319
## pf324       -1.128e+00  8.773e-01  -1.286 0.198319
## pf325       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf326       -7.339e-01  8.608e-01  -0.853 0.393898
## pf327       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf328        3.613e-01  8.512e-01   0.424 0.671239
## pf329        3.028e+00  1.236e+00   2.449 0.014306 *
## pf330       -7.339e-01  8.608e-01  -0.853 0.393898
## pf331       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf332       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf333        3.028e+00  1.236e+00   2.449 0.014306 *
## pf334       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf335       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf336       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf337        3.028e+00  1.236e+00   2.449 0.014306 *
## pf338       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf339       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf340        1.137e+00  8.854e-01   1.284 0.199151
## pf341        1.137e+00  8.854e-01   1.284 0.199151
## pf342        3.613e-01  8.512e-01   0.424 0.671239
## pf343       -1.128e+00  8.773e-01  -1.286 0.198319
## pf344       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf345       -7.339e-01  8.608e-01  -0.853 0.393898
## pf346       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf347        1.595e+00  9.280e-01   1.719 0.085576 .
## pf348       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf349       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf350       -3.615e-01  8.513e-01  -0.425 0.671099
## pf351       -7.339e-01  8.608e-01  -0.853 0.393898
## pf352       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf353       -7.339e-01  8.608e-01  -0.853 0.393898
## pf354       -2.655e+00  1.027e+00  -2.585 0.009737 **
```

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## pf355        1.137e+00  8.854e-01   1.284 0.199151
## pf356        2.168e+00  1.013e+00   2.140 0.032343 *
## pf357       -1.128e+00  8.773e-01  -1.286 0.198319
## pf358        7.347e-01  8.625e-01   0.852 0.394349
## pf359        1.137e+00  8.854e-01   1.284 0.199151
## pf360        3.028e+00  1.236e+00   2.449 0.014306 *
## pf361       -3.408e-13  8.480e-01   0.000 1.000000
## pf362        1.137e+00  8.854e-01   1.284 0.199151
## pf363       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf364       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf365       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf366       -3.615e-01  8.513e-01  -0.425 0.671099
## pf367       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf368       -7.339e-01  8.608e-01  -0.853 0.393898
## pf369       -1.128e+00  8.773e-01  -1.286 0.198319
## pf370        1.137e+00  8.854e-01   1.284 0.199151
## pf371       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf372       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf373       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf374       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf375        7.347e-01  8.625e-01   0.852 0.394349
## pf376       -1.128e+00  8.773e-01  -1.286 0.198319
## pf377       -1.128e+00  8.773e-01  -1.286 0.198319
## pf378        2.168e+00  1.013e+00   2.140 0.032343 *
## pf379       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf380       -1.128e+00  8.773e-01  -1.286 0.198319
## pf381       -1.128e+00  8.773e-01  -1.286 0.198319
## pf382       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf383       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf384       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf385        2.168e+00  1.013e+00   2.140 0.032343 *
## pf386       -3.965e-13  8.480e-01   0.000 1.000000
## pf387       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf388       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf389        1.137e+00  8.854e-01   1.284 0.199151
## pf390        3.028e+00  1.236e+00   2.449 0.014306 *
## pf391       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf392        2.168e+00  1.013e+00   2.140 0.032343 *
## pf393       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf394       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf395        3.028e+00  1.236e+00   2.449 0.014306 *
## pf396       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf397       -1.128e+00  8.773e-01  -1.286 0.198319
## pf398       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf399       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf400       -3.298e-13  8.480e-01   0.000 1.000000
```

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## pf401        3.613e-01  8.512e-01   0.424 0.671239
## pf402       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf403       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf404       -1.128e+00  8.773e-01  -1.286 0.198319
## pf405       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf406        7.347e-01  8.625e-01   0.852 0.394349
## pf407        3.613e-01  8.512e-01   0.424 0.671239
## pf408       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf409       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf410       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf411       -7.339e-01  8.608e-01  -0.853 0.393898
## pf412       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf413       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf414       -1.128e+00  8.773e-01  -1.286 0.198319
## pf415       -7.339e-01  8.608e-01  -0.853 0.393898
## pf416       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf417        1.137e+00  8.854e-01   1.284 0.199151
## pf418       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf419       -3.615e-01  8.513e-01  -0.425 0.671099
## pf420       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf421       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf422       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf423       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf424       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf425       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf426       -7.339e-01  8.608e-01  -0.853 0.393898
## pf427       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf428       -1.128e+00  8.773e-01  -1.286 0.198319
## pf429       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf430       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf431        1.137e+00  8.854e-01   1.284 0.199151
## pf432       -1.128e+00  8.773e-01  -1.286 0.198319
## pf433       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf434       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf435       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf436       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf437        3.613e-01  8.512e-01   0.424 0.671239
## pf438        1.137e+00  8.854e-01   1.284 0.199151
## pf439       -1.128e+00  8.773e-01  -1.286 0.198319
## pf440       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf441       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf442       -1.128e+00  8.773e-01  -1.286 0.198319
## pf443       -4.860e-13  8.480e-01   0.000 1.000000
## pf444       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf445       -1.128e+00  8.773e-01  -1.286 0.198319
## pf446       -2.051e+00  9.458e-01  -2.169 0.030107 *
```

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## pf447      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf448      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf449      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf450      -7.339e-01  8.608e-01  -0.853 0.393898
## pf451      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf452       2.168e+00  1.013e+00   2.140 0.032343 *
## pf453      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf454      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf455      -1.128e+00  8.773e-01  -1.286 0.198319
## pf456      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf457       2.168e+00  1.013e+00   2.140 0.032343 *
## pf458      -1.128e+00  8.773e-01  -1.286 0.198319
## pf459      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf460      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf461      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf462      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf463      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf464      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf465      -7.339e-01  8.608e-01  -0.853 0.393898
## pf466      -4.023e-13  8.480e-01   0.000 1.000000
## pf467      -1.128e+00  8.773e-01  -1.286 0.198319
## pf468      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf469      -1.128e+00  8.773e-01  -1.286 0.198319
## pf470       3.613e-01  8.512e-01   0.424 0.671239
## pf471       1.137e+00  8.854e-01   1.284 0.199151
## pf472      -3.615e-01  8.513e-01  -0.425 0.671099
## pf473      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf474       1.137e+00  8.854e-01   1.284 0.199151
## pf475      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf476      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf477       7.347e-01  8.625e-01   0.852 0.394349
## pf478       3.028e+00  1.236e+00   2.449 0.014306 *
## pf479      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf480      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf481      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf482      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf483      -7.339e-01  8.608e-01  -0.853 0.393898
## pf484      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf485      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf486      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf487       3.613e-01  8.512e-01   0.424 0.671239
## pf488       1.595e+00  9.280e-01   1.719 0.085576 .
## pf489       2.168e+00  1.013e+00   2.140 0.032343 *
## pf490      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf491      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf492       2.168e+00  1.013e+00   2.140 0.032343 *
```

```
## pf493       -1.128e+00  8.773e-01  -1.286 0.198319
## pf494       -1.128e+00  8.773e-01  -1.286 0.198319
## pf495       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf496       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf497       -3.737e-13  8.480e-01   0.000 1.000000
## pf498       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf499       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf500        2.168e+00  1.013e+00   2.140 0.032343 *
## pf501       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf502        7.347e-01  8.625e-01   0.852 0.394349
## pf503       -1.128e+00  8.773e-01  -1.286 0.198319
## pf504       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf505       -1.128e+00  8.773e-01  -1.286 0.198319
## pf506       -3.696e-13  8.480e-01   0.000 1.000000
## pf507        2.168e+00  1.013e+00   2.140 0.032343 *
## pf508       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf509       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf510        1.595e+00  9.280e-01   1.719 0.085576 .
## pf511       -1.128e+00  8.773e-01  -1.286 0.198319
## pf512        3.028e+00  1.236e+00   2.449 0.014306 *
## pf513       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf514       -7.339e-01  8.608e-01  -0.853 0.393898
## pf515        7.347e-01  8.625e-01   0.852 0.394349
## pf516       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf517        3.028e+00  1.236e+00   2.449 0.014306 *
## pf518       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf519       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf520       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf521       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf522       -7.339e-01  8.608e-01  -0.853 0.393898
## pf523        2.168e+00  1.013e+00   2.140 0.032343 *
## pf524        7.347e-01  8.625e-01   0.852 0.394349
## pf525        1.137e+00  8.854e-01   1.284 0.199151
## pf526        1.595e+00  9.280e-01   1.719 0.085576 .
## pf527       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf528       -7.339e-01  8.608e-01  -0.853 0.393898
## pf529       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf530       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf531        3.028e+00  1.236e+00   2.449 0.014306 *
## pf532        3.613e-01  8.512e-01   0.424 0.671239
## pf533       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf534        3.028e+00  1.236e+00   2.449 0.014306 *
## pf535       -1.128e+00  8.773e-01  -1.286 0.198319
## pf536       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf537        3.028e+00  1.236e+00   2.449 0.014306 *
## pf538       -1.128e+00  8.773e-01  -1.286 0.198319
```

```
## pf539      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf540       3.028e+00  1.236e+00   2.449 0.014306 *
## pf541      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf542      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf543      -3.615e-01  8.513e-01  -0.425 0.671099
## pf544      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf545      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf546       2.168e+00  1.013e+00   2.140 0.032343 *
## pf547      -3.723e-13  8.480e-01   0.000 1.000000
## pf548      -1.128e+00  8.773e-01  -1.286 0.198319
## pf549       7.347e-01  8.625e-01   0.852 0.394349
## pf550      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf551      -1.128e+00  8.773e-01  -1.286 0.198319
## pf552      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf553      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf554       3.028e+00  1.236e+00   2.449 0.014306 *
## pf555      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf556      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf557      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf558      -7.339e-01  8.608e-01  -0.853 0.393898
## pf559      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf560      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf561       2.168e+00  1.013e+00   2.140 0.032343 *
## pf562      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf563      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf564      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf565      -7.339e-01  8.608e-01  -0.853 0.393898
## pf566       1.595e+00  9.280e-01   1.719 0.085576 .
## pf567       1.137e+00  8.854e-01   1.284 0.199151
## pf568      -7.339e-01  8.608e-01  -0.853 0.393898
## pf569       3.028e+00  1.236e+00   2.449 0.014306 *
## pf570      -1.128e+00  8.773e-01  -1.286 0.198319
## pf571      -3.860e-13  8.480e-01   0.000 1.000000
## pf572       3.613e-01  8.512e-01   0.424 0.671239
## pf573      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf574       1.595e+00  9.280e-01   1.719 0.085576 .
## pf575      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf576      -3.615e-01  8.513e-01  -0.425 0.671099
## pf577      -1.128e+00  8.773e-01  -1.286 0.198319
## pf578      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf579       3.613e-01  8.512e-01   0.424 0.671239
## pf580       3.028e+00  1.236e+00   2.449 0.014306 *
## pf581       1.595e+00  9.280e-01   1.719 0.085576 .
## pf582       7.347e-01  8.625e-01   0.852 0.394349
## pf583       1.595e+00  9.280e-01   1.719 0.085576 .
## pf584      -1.128e+00  8.773e-01  -1.286 0.198319
```

```
## pf585      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf586      -1.128e+00  8.773e-01  -1.286 0.198319
## pf587      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf588      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf589      -1.128e+00  8.773e-01  -1.286 0.198319
## pf590      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf591       3.028e+00  1.236e+00   2.449 0.014306 *
## pf592      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf593      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf594      -3.476e-13  8.480e-01   0.000 1.000000
## pf595       7.347e-01  8.625e-01   0.852 0.394349
## pf596      -7.339e-01  8.608e-01  -0.853 0.393898
## pf597      -1.128e+00  8.773e-01  -1.286 0.198319
## pf598      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf599      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf600      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf601       3.028e+00  1.236e+00   2.449 0.014306 *
## pf602      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf603      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf604      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf605      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf606      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf607      -3.615e-01  8.513e-01  -0.425 0.671099
## pf608      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf609      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf610      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf611       3.028e+00  1.236e+00   2.449 0.014306 *
## pf612      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf613      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf614       1.137e+00  8.854e-01   1.284 0.199151
## pf615      -3.615e-01  8.513e-01  -0.425 0.671099
## pf616      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf617      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf618       3.028e+00  1.236e+00   2.449 0.014306 *
## pf619      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf620      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf621      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf622       7.347e-01  8.625e-01   0.852 0.394349
## pf623      -7.339e-01  8.608e-01  -0.853 0.393898
## pf624      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf625      -7.339e-01  8.608e-01  -0.853 0.393898
## pf626      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf627      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf628      -3.428e-13  8.480e-01   0.000 1.000000
## pf629      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf630      -1.560e+00  9.032e-01  -1.727 0.084206 .
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## pf631        3.028e+00  1.236e+00   2.449 0.014306 *
## pf632       -1.128e+00  8.773e-01  -1.286 0.198319
## pf633        7.347e-01  8.625e-01   0.852 0.394349
## pf634        3.613e-01  8.512e-01   0.424 0.671239
## pf635        3.613e-01  8.512e-01   0.424 0.671239
## pf636        2.168e+00  1.013e+00   2.140 0.032343 *
## pf637       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf638        3.613e-01  8.512e-01   0.424 0.671239
## pf639       -1.128e+00  8.773e-01  -1.286 0.198319
## pf640        2.168e+00  1.013e+00   2.140 0.032343 *
## pf641       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf642       -3.810e-13  8.480e-01   0.000 1.000000
## pf643       -1.128e+00  8.773e-01  -1.286 0.198319
## pf644       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf645        1.595e+00  9.280e-01   1.719 0.085576 .
## pf646        1.595e+00  9.280e-01   1.719 0.085576 .
## pf647       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf648       -7.339e-01  8.608e-01  -0.853 0.393898
## pf649       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf650       -1.128e+00  8.773e-01  -1.286 0.198319
## pf651       -3.936e-13  8.480e-01   0.000 1.000000
## pf652       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf653       -3.615e-01  8.513e-01  -0.425 0.671099
## pf654        3.028e+00  1.236e+00   2.449 0.014306 *
## pf655       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf656        1.595e+00  9.280e-01   1.719 0.085576 .
## pf657       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf658       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf659       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf660       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf661       -1.128e+00  8.773e-01  -1.286 0.198319
## pf662       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf663       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf664       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf665       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf666       -7.339e-01  8.608e-01  -0.853 0.393898
## pf667       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf668       -4.443e-13  8.480e-01   0.000 1.000000
## pf669        2.168e+00  1.013e+00   2.140 0.032343 *
## pf670       -3.257e-13  8.480e-01   0.000 1.000000
## pf671        1.137e+00  8.854e-01   1.284 0.199151
## pf672       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf673       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf674       -3.471e-13  8.480e-01   0.000 1.000000
## pf675       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf676       -2.655e+00  1.027e+00  -2.585 0.009737 **
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## pf677       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf678       -1.128e+00  8.773e-01  -1.286 0.198319
## pf679        2.168e+00  1.013e+00   2.140 0.032343 *
## pf680       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf681       -1.128e+00  8.773e-01  -1.286 0.198319
## pf682        3.613e-01  8.512e-01   0.424 0.671239
## pf683       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf684        2.168e+00  1.013e+00   2.140 0.032343 *
## pf685       -3.615e-01  8.513e-01  -0.425 0.671099
## pf686       -1.128e+00  8.773e-01  -1.286 0.198319
## pf687        7.347e-01  8.625e-01   0.852 0.394349
## pf688        7.347e-01  8.625e-01   0.852 0.394349
## pf689       -1.128e+00  8.773e-01  -1.286 0.198319
## pf690       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf691       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf692       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf693       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf694       -7.339e-01  8.608e-01  -0.853 0.393898
## pf695       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf696       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf697       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf698        1.137e+00  8.854e-01   1.284 0.199151
## pf699       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf700       -1.128e+00  8.773e-01  -1.286 0.198319
## pf701        2.168e+00  1.013e+00   2.140 0.032343 *
## pf702       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf703        1.137e+00  8.854e-01   1.284 0.199151
## pf704       -3.615e-01  8.513e-01  -0.425 0.671099
## pf705       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf706       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf707       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf708       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf709       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf710       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf711        3.028e+00  1.236e+00   2.449 0.014306 *
## pf712       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf713       -7.339e-01  8.608e-01  -0.853 0.393898
## pf714       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf715       -3.615e-01  8.513e-01  -0.425 0.671099
## pf716       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf717       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf718       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf719        3.028e+00  1.236e+00   2.449 0.014306 *
## pf720       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf721       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf722        3.613e-01  8.512e-01   0.424 0.671239
```

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## pf723       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf724       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf725       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf726       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf727       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf728       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf729       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf730       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf731        3.613e-01  8.512e-01   0.424 0.671239
## pf732       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf733        1.137e+00  8.854e-01   1.284 0.199151
## pf734       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf735       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf736       -3.425e-13  8.480e-01   0.000 1.000000
## pf737       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf738       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf739       -1.128e+00  8.773e-01  -1.286 0.198319
## pf740        3.028e+00  1.236e+00   2.449 0.014306 *
## pf741       -3.615e-01  8.513e-01  -0.425 0.671099
## pf742       -3.615e-01  8.513e-01  -0.425 0.671099
## pf743       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf744       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf745       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf746       -1.128e+00  8.773e-01  -1.286 0.198319
## pf747       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf748        2.168e+00  1.013e+00   2.140 0.032343 *
## pf749       -7.339e-01  8.608e-01  -0.853 0.393898
## pf750       -3.626e-13  8.480e-01   0.000 1.000000
## pf751       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf752        2.168e+00  1.013e+00   2.140 0.032343 *
## pf753       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf754       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf755       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf756       -3.615e-01  8.513e-01  -0.425 0.671099
## pf757       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf758       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf759       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf760        7.347e-01  8.625e-01   0.852 0.394349
## pf761        3.028e+00  1.236e+00   2.449 0.014306 *
## pf762       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf763       -3.615e-01  8.513e-01  -0.425 0.671099
## pf764       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf765       -1.128e+00  8.773e-01  -1.286 0.198319
## pf766       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf767       -1.128e+00  8.773e-01  -1.286 0.198319
## pf768       -3.615e-01  8.513e-01  -0.425 0.671099
```

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## pf769       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf770        7.347e-01  8.625e-01   0.852 0.394349
## pf771       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf772       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf773       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf774       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf775       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf776       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf777       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf778        2.168e+00  1.013e+00   2.140 0.032343 *
## pf779       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf780        3.613e-01  8.512e-01   0.424 0.671239
## pf781        1.595e+00  9.280e-01   1.719 0.085576 .
## pf782       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf783       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf784       -4.254e-13  8.480e-01   0.000 1.000000
## pf785        3.028e+00  1.236e+00   2.449 0.014306 *
## pf786       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf787       -7.339e-01  8.608e-01  -0.853 0.393898
## pf788       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf789        3.028e+00  1.236e+00   2.449 0.014306 *
## pf790       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf791       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf792       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf793       -3.615e-01  8.513e-01  -0.425 0.671099
## pf794       -1.128e+00  8.773e-01  -1.286 0.198319
## pf795        2.168e+00  1.013e+00   2.140 0.032343 *
## pf796       -3.758e-13  8.480e-01   0.000 1.000000
## pf797        7.347e-01  8.625e-01   0.852 0.394349
## pf798       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf799       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf800       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf801       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf802       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf803       -1.128e+00  8.773e-01  -1.286 0.198319
## pf804       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf805       -1.128e+00  8.773e-01  -1.286 0.198319
## pf806        7.347e-01  8.625e-01   0.852 0.394349
## pf807       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf808       -1.128e+00  8.773e-01  -1.286 0.198319
## pf809       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf810       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf811       -7.339e-01  8.608e-01  -0.853 0.393898
## pf812       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf813       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf814       -1.128e+00  8.773e-01  -1.286 0.198319
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## pf815        1.595e+00  9.280e-01   1.719 0.085576 .
## pf816       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf817       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf818       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf819       -7.339e-01  8.608e-01  -0.853 0.393898
## pf820       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf821        3.028e+00  1.236e+00   2.449 0.014306 *
## pf822       -7.339e-01  8.608e-01  -0.853 0.393898
## pf823       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf824       -7.339e-01  8.608e-01  -0.853 0.393898
## pf825       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf826       -7.339e-01  8.608e-01  -0.853 0.393898
## pf827       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf828        7.347e-01  8.625e-01   0.852 0.394349
## pf829       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf830        3.028e+00  1.236e+00   2.449 0.014306 *
## pf831       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf832       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf833       -1.128e+00  8.773e-01  -1.286 0.198319
## pf834       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf835       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf836        3.613e-01  8.512e-01   0.424 0.671239
## pf837       -3.410e-13  8.480e-01   0.000 1.000000
## pf838       -1.128e+00  8.773e-01  -1.286 0.198319
## pf839       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf840        3.028e+00  1.236e+00   2.449 0.014306 *
## pf841       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf842       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf843       -7.339e-01  8.608e-01  -0.853 0.393898
## pf844       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf845       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf846        2.168e+00  1.013e+00   2.140 0.032343 *
## pf847       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf848       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf849       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf850       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf851       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf852       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf853       -1.128e+00  8.773e-01  -1.286 0.198319
## pf854       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf855        2.168e+00  1.013e+00   2.140 0.032343 *
## pf856       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf857       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf858       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf859       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf860        2.168e+00  1.013e+00   2.140 0.032343 *
```

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## pf861       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf862       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf863        2.168e+00  1.013e+00   2.140 0.032343 *
## pf864       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf865       -1.128e+00  8.773e-01  -1.286 0.198319
## pf866       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf867       -7.339e-01  8.608e-01  -0.853 0.393898
## pf868       -3.615e-01  8.513e-01  -0.425 0.671099
## pf869        3.613e-01  8.512e-01   0.424 0.671239
## pf870       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf871       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf872       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf873       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf874        2.168e+00  1.013e+00   2.140 0.032343 *
## pf875        1.137e+00  8.854e-01   1.284 0.199151
## pf876       -1.128e+00  8.773e-01  -1.286 0.198319
## pf877       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf878       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf879       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf880       -7.339e-01  8.608e-01  -0.853 0.393898
## pf881       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf882       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf883       -3.611e-13  8.480e-01   0.000 1.000000
## pf884        3.028e+00  1.236e+00   2.449 0.014306 *
## pf885       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf886       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf887        7.347e-01  8.625e-01   0.852 0.394349
## pf888        1.137e+00  8.854e-01   1.284 0.199151
## pf889        2.168e+00  1.013e+00   2.140 0.032343 *
## pf890       -1.128e+00  8.773e-01  -1.286 0.198319
## pf891       -3.615e-01  8.513e-01  -0.425 0.671099
## pf892        2.168e+00  1.013e+00   2.140 0.032343 *
## pf893       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf894       -1.128e+00  8.773e-01  -1.286 0.198319
## pf895       -7.339e-01  8.608e-01  -0.853 0.393898
## pf896       -1.128e+00  8.773e-01  -1.286 0.198319
## pf897       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf898       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf899        3.028e+00  1.236e+00   2.449 0.014306 *
## pf900       -3.615e-01  8.513e-01  -0.425 0.671099
## pf901       -3.615e-01  8.513e-01  -0.425 0.671099
## pf902       -1.128e+00  8.773e-01  -1.286 0.198319
## pf903       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf904       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf905       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf906       -1.560e+00  9.032e-01  -1.727 0.084206 .
```

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## pf907        1.595e+00  9.280e-01   1.719 0.085576 .
## pf908       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf909       -1.128e+00  8.773e-01  -1.286 0.198319
## pf910       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf911       -3.615e-01  8.513e-01  -0.425 0.671099
## pf912       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf913        1.137e+00  8.854e-01   1.284 0.199151
## pf914       -1.128e+00  8.773e-01  -1.286 0.198319
## pf915       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf916       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf917        7.347e-01  8.625e-01   0.852 0.394349
## pf918       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf919       -3.615e-01  8.513e-01  -0.425 0.671099
## pf920       -3.286e-13  8.480e-01   0.000 1.000000
## pf921       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf922       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf923       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf924        2.168e+00  1.013e+00   2.140 0.032343 *
## pf925       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf926       -1.128e+00  8.773e-01  -1.286 0.198319
## pf927       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf928       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf929       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf930       -3.615e-01  8.513e-01  -0.425 0.671099
## pf931       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf932        1.137e+00  8.854e-01   1.284 0.199151
## pf933       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf934        3.028e+00  1.236e+00   2.449 0.014306 *
## pf935        3.028e+00  1.236e+00   2.449 0.014306 *
## pf936       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf937       -7.339e-01  8.608e-01  -0.853 0.393898
## pf938       -7.339e-01  8.608e-01  -0.853 0.393898
## pf939       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf940        1.595e+00  9.280e-01   1.719 0.085576 .
## pf941        3.028e+00  1.236e+00   2.449 0.014306 *
## pf942        7.347e-01  8.625e-01   0.852 0.394349
## pf943       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf944       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf945       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf946       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf947       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf948       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf949       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf950       -3.615e-01  8.513e-01  -0.425 0.671099
## pf951       -1.128e+00  8.773e-01  -1.286 0.198319
## pf952       -7.339e-01  8.608e-01  -0.853 0.393898
```

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## pf953       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf954        3.028e+00  1.236e+00   2.449 0.014306 *
## pf955       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf956       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf957       -7.339e-01  8.608e-01  -0.853 0.393898
## pf958        3.028e+00  1.236e+00   2.449 0.014306 *
## pf959       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf960        7.347e-01  8.625e-01   0.852 0.394349
## pf961       -3.615e-01  8.513e-01  -0.425 0.671099
## pf962       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf963       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf964        3.028e+00  1.236e+00   2.449 0.014306 *
## pf965       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf966       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf967       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf968       -3.615e-01  8.513e-01  -0.425 0.671099
## pf969        3.028e+00  1.236e+00   2.449 0.014306 *
## pf970       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf971        3.613e-01  8.512e-01   0.424 0.671239
## pf972       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf973        3.028e+00  1.236e+00   2.449 0.014306 *
## pf974       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf975       -3.615e-01  8.513e-01  -0.425 0.671099
## pf976       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf977        2.168e+00  1.013e+00   2.140 0.032343 *
## pf978       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf979       -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf980        3.028e+00  1.236e+00   2.449 0.014306 *
## pf981       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf982       -1.128e+00  8.773e-01  -1.286 0.198319
## pf983       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf984        3.613e-01  8.512e-01   0.424 0.671239
## pf985        1.137e+00  8.854e-01   1.284 0.199151
## pf986       -3.632e-13  8.480e-01   0.000 1.000000
## pf987        2.168e+00  1.013e+00   2.140 0.032343 *
## pf988       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf989       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf990       -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf991       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf992       -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf993       -1.128e+00  8.773e-01  -1.286 0.198319
## pf994       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf995       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf996       -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf997        7.347e-01  8.625e-01   0.852 0.394349
## pf998       -1.560e+00  9.032e-01  -1.727 0.084206 .
```

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## pf999       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1000     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1001     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1002     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1003     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1004     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1005     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1006      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1007      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1008     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1009      7.347e-01  8.625e-01   0.852 0.394349
## pf1010      3.613e-01  8.512e-01   0.424 0.671239
## pf1011     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1012     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1013     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1014     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1015      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1016      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1017     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1018     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1019      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1020     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1021     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1022      3.613e-01  8.512e-01   0.424 0.671239
## pf1023      7.347e-01  8.625e-01   0.852 0.394349
## pf1024     -3.584e-13  8.480e-01   0.000 1.000000
## pf1025     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1026      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1027     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1028     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1029     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1030     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1031     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1032      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1033      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1034     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1035     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1036     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1037      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1038     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1039     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1040     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1041      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1042      3.613e-01  8.512e-01   0.424 0.671239
## pf1043     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1044     -2.051e+00  9.458e-01  -2.169 0.030107 *
```

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## pf1045     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1046     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1047      3.613e-01  8.512e-01   0.424 0.671239
## pf1048      7.347e-01  8.625e-01   0.852 0.394349
## pf1049      7.347e-01  8.625e-01   0.852 0.394349
## pf1050     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1051     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1052     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1053      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1054      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1055     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1056     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1057     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1058     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1059     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1060     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1061     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1062      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1063      3.613e-01  8.512e-01   0.424 0.671239
## pf1064     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1065      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1066      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1067      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1068      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1069     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1070     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1071     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1072     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1073      1.137e+00  8.854e-01   1.284 0.199151
## pf1074     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1075     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1076     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1077     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1078     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1079     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1080     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1081     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1082      7.347e-01  8.625e-01   0.852 0.394349
## pf1083     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1084      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1085     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1086     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1087     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1088     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1089     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1090     -1.128e+00  8.773e-01  -1.286 0.198319
```

```
## pf1091      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1092      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1093      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1094      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1095      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1096      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1097       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1098      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1099      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1100      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1101      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1102      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1103      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1104      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1105      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1106      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1107       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1108       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1109      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1110      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1111      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1112      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1113      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1114      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1115      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1116      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1117       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1118      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1119      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1120      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1121       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1122      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1123      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1124      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1125      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1126      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1127       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1128      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1129       3.613e-01  8.512e-01   0.424 0.671239
## pf1130      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1131      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1132      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1133      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1134       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1135      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1136      -1.560e+00  9.032e-01  -1.727 0.084206 .
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## pf1137     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1138     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1139      3.613e-01  8.512e-01   0.424 0.671239
## pf1140     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1141      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1142      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1143      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1144     -3.614e-13  8.480e-01   0.000 1.000000
## pf1145     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1146     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1147     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1148     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1149     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1150     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1151      7.347e-01  8.625e-01   0.852 0.394349
## pf1152     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1153     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1154     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1155      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1156     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1157     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1158     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1159      7.347e-01  8.625e-01   0.852 0.394349
## pf1160      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1161      7.347e-01  8.625e-01   0.852 0.394349
## pf1162     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1163     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1164     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1165     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1166     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1167      7.347e-01  8.625e-01   0.852 0.394349
## pf1168      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1169     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1170     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1171     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1172     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1173     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1174     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1175     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1176     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1177     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1178      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1179      3.613e-01  8.512e-01   0.424 0.671239
## pf1180     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1181      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1182     -3.615e-01  8.513e-01  -0.425 0.671099
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## pf1183     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1184     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1185     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1186     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1187     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1188     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1189      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1190     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1191     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1192     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1193      1.137e+00  8.854e-01   1.284 0.199151
## pf1194      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1195      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1196     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1197     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1198     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1199     -3.398e-13  8.480e-01   0.000 1.000000
## pf1200     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1201     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1202     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1203     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1204     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1205      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1206     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1207     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1208     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1209     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1210     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1211     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1212     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1213     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1214     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1215     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1216     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1217     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1218      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1219      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1220      7.347e-01  8.625e-01   0.852 0.394349
## pf1221     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1222     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1223     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1224     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1225     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1226      7.347e-01  8.625e-01   0.852 0.394349
## pf1227     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1228     -2.051e+00  9.458e-01  -2.169 0.030107 *
```

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## pf1229     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1230     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1231      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1232      1.137e+00  8.854e-01   1.284 0.199151
## pf1233     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1234     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1235     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1236     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1237     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1238     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1239     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1240     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1241      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1242     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1243     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1244     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1245     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1246     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1247     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1248     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1249      7.347e-01  8.625e-01   0.852 0.394349
## pf1250     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1251     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1252     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1253      1.137e+00  8.854e-01   1.284 0.199151
## pf1254      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1255      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1256      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1257      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1258     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1259      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1260     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1261     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1262     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1263     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1264     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1265     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1266     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1267     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1268      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1269      7.347e-01  8.625e-01   0.852 0.394349
## pf1270     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1271      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1272      3.613e-01  8.512e-01   0.424 0.671239
## pf1273     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1274     -2.051e+00  9.458e-01  -2.169 0.030107 *
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## pf1275       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1276      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1277      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1278      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1279      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1280       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1281      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1282      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1283       7.347e-01  8.625e-01   0.852 0.394349
## pf1284       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1285      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1286      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1287      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1288      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1289       7.347e-01  8.625e-01   0.852 0.394349
## pf1290      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1291      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1292      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1293       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1294      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1295      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1296      -3.607e-13  8.480e-01   0.000 1.000000
## pf1297       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1298       3.613e-01  8.512e-01   0.424 0.671239
## pf1299       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1300      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1301      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1302       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1303      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1304      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1305      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1306      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1307      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1308      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1309      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1310       3.613e-01  8.512e-01   0.424 0.671239
## pf1311      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1312      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1313      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1314       7.347e-01  8.625e-01   0.852 0.394349
## pf1315      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1316      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1317       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1318      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1319      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1320      -3.539e+00  1.243e+00  -2.846 0.004426 **
```

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## pf1321      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1322      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1323       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1324      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1325       7.347e-01  8.625e-01   0.852 0.394349
## pf1326      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1327      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1328       1.137e+00  8.854e-01   1.284 0.199151
## pf1329      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1330      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1331      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1332       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1333       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1334      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1335       3.613e-01  8.512e-01   0.424 0.671239
## pf1336      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1337      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1338       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1339       1.137e+00  8.854e-01   1.284 0.199151
## pf1340       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1341       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1342      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1343      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1344       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1345       7.347e-01  8.625e-01   0.852 0.394349
## pf1346      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1347      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1348      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1349      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1350      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1351      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1352      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1353      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1354       1.137e+00  8.854e-01   1.284 0.199151
## pf1355      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1356      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1357      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1358      -3.520e-13  8.480e-01   0.000 1.000000
## pf1359      -3.589e-13  8.480e-01   0.000 1.000000
## pf1360      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1361      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1362      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1363      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1364       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1365      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1366       1.595e+00  9.280e-01   1.719 0.085576 .
```

```
## pf1367       3.613e-01  8.512e-01   0.424 0.671239
## pf1368      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1369      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1370       3.613e-01  8.512e-01   0.424 0.671239
## pf1371      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1372      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1373       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1374       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1375      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1376      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1377      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1378       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1379      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1380      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1381      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1382      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1383       7.347e-01  8.625e-01   0.852 0.394349
## pf1384       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1385      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1386      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1387      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1388      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1389      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1390      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1391      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1392      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1393      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1394       1.137e+00  8.854e-01   1.284 0.199151
## pf1395      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1396      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1397      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1398      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1399       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1400       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1401      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1402      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1403       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1404      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1405      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1406      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1407      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1408      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1409      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1410      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1411      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1412       2.168e+00  1.013e+00   2.140 0.032343 *
```

```
## pf1413       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1414      -3.513e-13  8.480e-01   0.000 1.000000
## pf1415      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1416      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1417      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1418      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1419      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1420      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1421      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1422      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1423      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1424      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1425       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1426       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1427      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1428       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1429      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1430      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1431      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1432      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1433       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1434      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1435       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1436      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1437       3.613e-01  8.512e-01   0.424 0.671239
## pf1438       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1439      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1440       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1441      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1442       3.613e-01  8.512e-01   0.424 0.671239
## pf1443       7.347e-01  8.625e-01   0.852 0.394349
## pf1444      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1445      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1446       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1447      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1448      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1449      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1450      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1451      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1452       2.168e+00  1.013e+00   2.140 0.032343 *
## pf1453      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1454      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1455      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1456      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1457      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1458      -3.392e-13  8.480e-01   0.000 1.000000
```

```
## pf1459      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1460       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1461      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1462      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1463      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1464      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1465      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1466      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1467      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1468      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1469      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1470      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1471      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1472      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1473      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1474       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1475       1.137e+00  8.854e-01   1.284 0.199151
## pf1476      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1477      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1478      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1479      -3.473e-13  8.480e-01   0.000 1.000000
## pf1480      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1481      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1482      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1483      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1484      -3.510e-13  8.480e-01   0.000 1.000000
## pf1485       1.595e+00  9.280e-01   1.719 0.085576 .
## pf1486      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1487       7.347e-01  8.625e-01   0.852 0.394349
## pf1488      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1489       3.613e-01  8.512e-01   0.424 0.671239
## pf1490      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1491      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1492      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1493      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1494       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1495      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1496      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1497      -3.615e-01  8.513e-01  -0.425 0.671099
## pf1498      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1499      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1500      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1501      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1502      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1503      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1504       3.028e+00  1.236e+00   2.449 0.014306 *
```

```
## pf1505     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1506     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1507      3.613e-01  8.512e-01   0.424 0.671239
## pf1508     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1509     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1510     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1511     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1512      7.347e-01  8.625e-01   0.852 0.394349
## pf1513      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1514     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1515     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1516     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1517     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1518     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1519     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1520      1.595e+00  9.280e-01   1.719 0.085576 .
## pf1521     -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1522     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1523     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1524     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1525      1.137e+00  8.854e-01   1.284 0.199151
## pf1526     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1527      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1528      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1529     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1530      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1531     -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1532     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1533     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1534      7.347e-01  8.625e-01   0.852 0.394349
## pf1535     -3.615e-01  8.513e-01  -0.425 0.671099
## pf1536     -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1537      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1538      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1539      7.347e-01  8.625e-01   0.852 0.394349
## pf1540     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1541     -1.128e+00  8.773e-01  -1.286 0.198319
## pf1542      3.613e-01  8.512e-01   0.424 0.671239
## pf1543     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1544      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1545      3.028e+00  1.236e+00   2.449 0.014306 *
## pf1546     -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1547     -3.461e-13  8.480e-01   0.000 1.000000
## pf1548     -7.339e-01  8.608e-01  -0.853 0.393898
## pf1549      2.168e+00  1.013e+00   2.140 0.032343 *
## pf1550     -3.539e+00  1.243e+00  -2.846 0.004426 **
```

```
## pf1551      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1552       3.028e+00  1.236e+00   2.449 0.014306 *
## pf1553      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1554      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1555      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1556      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1557      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1558      -1.128e+00  8.773e-01  -1.286 0.198319
## pf1559      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1560      -3.571e-13  8.480e-01   0.000 1.000000
## pf1561       3.613e-01  8.512e-01   0.424 0.671239
## pf1562      -3.539e+00  1.243e+00  -2.846 0.004426 **
## pf1563      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1564      -1.560e+00  9.032e-01  -1.727 0.084206 .
## pf1565      -7.339e-01  8.608e-01  -0.853 0.393898
## pf1566       1.137e+00  8.854e-01   1.284 0.199151
## pf1567      -2.051e+00  9.458e-01  -2.169 0.030107 *
## pf1568      -2.655e+00  1.027e+00  -2.585 0.009737 **
## pf1569      -3.539e+00  1.243e+00  -2.846 0.004426 **
## itemV2       7.974e-01  1.050e-01   7.591 3.18e-14 ***
## itemV3       2.793e+00  1.036e-01  26.968  < 2e-16 ***
## itemV4       1.305e-01  1.089e-01   1.198 0.230959
## itemV5       1.106e+00  1.038e-01  10.655  < 2e-16 ***
## itemV6       7.430e-01  1.053e-01   7.056 1.72e-12 ***
## itemV7       3.191e+00  1.054e-01  30.279  < 2e-16 ***
## itemV8      -4.153e-01  1.133e-01  -3.665 0.000247 ***
## itemV9       2.683e+00  1.032e-01  25.998  < 2e-16 ***
## itemV10      2.049e+00  1.022e-01  20.049  < 2e-16 ***
## itemV11      1.639e+00  1.025e-01  15.996  < 2e-16 ***
## itemV12     -2.629e-01  1.120e-01  -2.347 0.018910 *
## itemV13     -1.816e-02  1.100e-01  -0.165 0.868904
## itemV14     -1.456e+00  1.254e-01 -11.618  < 2e-16 ***
## itemV15      6.269e-01  1.059e-01   5.920 3.22e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 31284  on 23534  degrees of freedom
## Residual deviance: 18483  on 21952  degrees of freedom
## AIC: 21649
##
## Number of Fisher Scoring iterations: 5
```

Model summary of random effects Rasch model

```
##
## Call:
## rasch(data = dat)
##
## Model Summary:
##    log.Lik      AIC      BIC
##  -12741.81 25515.63 25605.24
##
## Coefficients:
##              value std.err   z.vals
## Dffclt.V1   0.4949  0.0341  14.4955
## Dffclt.V2   0.2387  0.0332   7.1965
## Dffclt.V3  -0.4662  0.0358 -13.0058
## Dffclt.V4   0.4543  0.0339  13.3939
## Dffclt.V5   0.1347  0.0331   4.0665
## Dffclt.V6   0.2568  0.0332   7.7345
## Dffclt.V7  -0.6085  0.0368 -16.5411
## Dffclt.V8   0.6203  0.0349  17.7499
## Dffclt.V9  -0.4265  0.0356 -11.9772
## Dffclt.V10 -0.1971  0.0343  -5.7411
## Dffclt.V11 -0.0506  0.0336  -1.5061
## Dffclt.V12  0.5750  0.0346  16.5993
## Dffclt.V13  0.5005  0.0342  14.6459
## Dffclt.V14  0.9056  0.0372  24.3671
## Dffclt.V15  0.2951  0.0333   8.8654
## Dscrmn      2.7332  0.0545  50.1716
##
## Integration:
## method: Gauss-Hermite
## quadrature points: 21
##
## Optimization:
## Convergence: 0
## max(|grad|): 0.0022
## quasi-Newton: BFGS
```

Model summary of extended Rasch model with all predictors including c2 to c15

```
##
## Call:
## glm(formula = fr ~ ., family = poisson, data = agg.data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
```

```
## -3.1184  -0.4860  -0.0206   0.4644   4.6002
##
## Coefficients:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept)    4.92725    0.08513  57.882  < 2e-16 ***
## V1            -2.72256    0.13335 -20.416  < 2e-16 ***
## V2            -2.55259    0.12888 -19.806  < 2e-16 ***
## V3            -1.69550    0.12527 -13.535  < 2e-16 ***
## V4            -2.73859    0.13342 -20.527  < 2e-16 ***
## V5            -2.48893    0.12857 -19.358  < 2e-16 ***
## V6            -2.57326    0.12871 -19.992  < 2e-16 ***
## V7            -1.44296    0.12627 -11.428  < 2e-16 ***
## V8            -2.84696    0.13676 -20.818  < 2e-16 ***
## V9            -1.76964    0.12580 -14.068  < 2e-16 ***
## V10           -2.09817    0.12697 -16.525  < 2e-16 ***
## V11           -2.26646    0.12633 -17.940  < 2e-16 ***
## V12           -2.88596    0.13587 -21.240  < 2e-16 ***
## V13           -2.75291    0.13444 -20.477  < 2e-16 ***
## V14           -3.34313    0.15200 -21.994  < 2e-16 ***
## V15           -2.60229    0.12963 -20.074  < 2e-16 ***
## c2             0.79515    0.17794   4.469 7.87e-06 ***
## c3            -0.29117    0.31362  -0.928    0.353
## c4             0.34836    0.58600   0.594    0.552
## c5            -0.93325    1.12846  -0.827    0.408
## c6             2.30218    2.20141   1.046    0.296
## c7            -4.82701    4.34730  -1.110    0.267
## c8             8.88149    8.73629   1.017    0.309
## c9           -14.65845   17.92996  -0.818    0.414
## c10           21.96543   37.56229   0.585    0.559
## c11          -30.31237   79.89453  -0.379    0.704
## c12           40.27645  170.87006   0.236    0.814
## c13          -58.04148  363.57669  -0.160    0.873
## c14          106.38183  763.96765   0.139    0.889
## c15         -246.76553 1581.03511  -0.156    0.876
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##
##     Null deviance: 5021.9  on 813  degrees of freedom
## Residual deviance:  488.1  on 784  degrees of freedom
## AIC: 2405.2
##
## Number of Fisher Scoring iterations: 5
```

Model summary of extended Rasch model with only c2

```
##
## Call:
## glm(formula = fr ~ V1 + V2 + V3 + V4 + V5 + V6 + V7 + V8 + V9 +
##     V10 + V11 + V12 + V13 + V14 + V15 + c2, family = poisson,
##     data = agg.data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -5.0802  -0.4437   0.1888   0.8456  16.1989
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  4.461072   0.058802   75.87   <2e-16 ***
## V1          -2.281032   0.084353  -27.04   <2e-16 ***
## V2          -2.079989   0.075765  -27.45   <2e-16 ***
## V3          -0.947335   0.058512  -16.19   <2e-16 ***
## V4          -2.369732   0.083709  -28.31   <2e-16 ***
## V5          -1.959579   0.072383  -27.07   <2e-16 ***
## V6          -2.053339   0.074915  -27.41   <2e-16 ***
## V7          -0.687726   0.059275  -11.60   <2e-16 ***
## V8          -2.463446   0.087518  -28.15   <2e-16 ***
## V9          -1.031527   0.059713  -17.27   <2e-16 ***
## V10         -1.386085   0.064685  -21.43   <2e-16 ***
## V11         -1.611345   0.065510  -24.60   <2e-16 ***
## V12         -2.473405   0.086910  -28.46   <2e-16 ***
## V13         -2.358923   0.085589  -27.56   <2e-16 ***
## V14         -2.742211   0.097882  -28.02   <2e-16 ***
## V15         -2.116892   0.076747  -27.58   <2e-16 ***
## c2           0.272947   0.004988   54.72   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##
##     Null deviance: 5021.9  on 813  degrees of freedom
## Residual deviance: 1193.9  on 797  degrees of freedom
## AIC: 3085
##
## Number of Fisher Scoring iterations: 5
```

Model summary of extended Rasch model with c2 and c3

```
##
## Call:
```

```
## glm(formula = fr ~ V1 + V2 + V3 + V4 + V5 + V6 + V7 + V8 + V9 +
##     V10 + V11 + V12 + V13 + V14 + V15 + c2 + c3, family = poisson,
##     data = agg.data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.9570  -0.5163   0.2101   0.8503  10.6989
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  3.979506   0.083397  47.717  < 2e-16 ***
## V1          -1.893079   0.096425 -19.633  < 2e-16 ***
## V2          -1.643706   0.088082 -18.661  < 2e-16 ***
## V3          -0.652312   0.065305  -9.989  < 2e-16 ***
## V4          -1.947789   0.096638 -20.156  < 2e-16 ***
## V5          -1.505862   0.084827 -17.752  < 2e-16 ***
## V6          -1.631826   0.086881 -18.782  < 2e-16 ***
## V7          -0.419767   0.064839  -6.474 9.55e-11 ***
## V8          -2.122181   0.098255 -21.599  < 2e-16 ***
## V9          -0.712701   0.067457 -10.565  < 2e-16 ***
## V10         -1.005583   0.074135 -13.564  < 2e-16 ***
## V11         -1.212874   0.076348 -15.886  < 2e-16 ***
## V12         -2.110039   0.098464 -21.429  < 2e-16 ***
## V13         -1.956497   0.098179 -19.928  < 2e-16 ***
## V14         -2.537869   0.105750 -23.999  < 2e-16 ***
## V15         -1.698049   0.088581 -19.169  < 2e-16 ***
## c2           0.137255   0.015070   9.108  < 2e-16 ***
## c3           0.021190   0.002204   9.614  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##
##     Null deviance: 5021.9  on 813  degrees of freedom
## Residual deviance: 1099.5  on 796  degrees of freedom
## AIC: 2992.6
##
## Number of Fisher Scoring iterations: 5
```

Model summary of extended Rasch model with c2, c3, and c4

```
##
## Call:
## glm(formula = fr ~ V1 + V2 + V3 + V4 + V5 + V6 + V7 + V8 + V9 +
##     V10 + V11 + V12 + V13 + V14 + V15 + c2 + c3 + c4, family = poisson,
##     data = agg.data)
```

```
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.9229  -0.4789   0.0410   0.4843   4.6576
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  5.021509   0.072479   69.28   <2e-16 ***
## V1          -2.861318   0.096678  -29.60   <2e-16 ***
## V2          -2.673624   0.089304  -29.94   <2e-16 ***
## V3          -1.842126   0.078535  -23.46   <2e-16 ***
## V4          -2.860394   0.095507  -29.95   <2e-16 ***
## V5          -2.586169   0.088134  -29.34   <2e-16 ***
## V6          -2.699063   0.089429  -30.18   <2e-16 ***
## V7          -1.595258   0.078852  -20.23   <2e-16 ***
## V8          -3.009990   0.100095  -30.07   <2e-16 ***
## V9          -1.918224   0.080761  -23.75   <2e-16 ***
## V10         -2.252810   0.086090  -26.17   <2e-16 ***
## V11         -2.394545   0.085353  -28.05   <2e-16 ***
## V12         -3.028928   0.099692  -30.38   <2e-16 ***
## V13         -2.883472   0.097643  -29.53   <2e-16 ***
## V14         -3.563911   0.118841  -29.99   <2e-16 ***
## V15         -2.718350   0.090132  -30.16   <2e-16 ***
## c2           0.893298   0.032487   27.50   <2e-16 ***
## c3          -0.258016   0.011429  -22.57   <2e-16 ***
## c4           0.046182   0.001895   24.37   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for poisson family taken to be 1)
##
##     Null deviance: 5021.9  on 813  degrees of freedom
## Residual deviance:  535.0  on 795  degrees of freedom
## AIC: 2430.1
##
## Number of Fisher Scoring iterations: 5
```