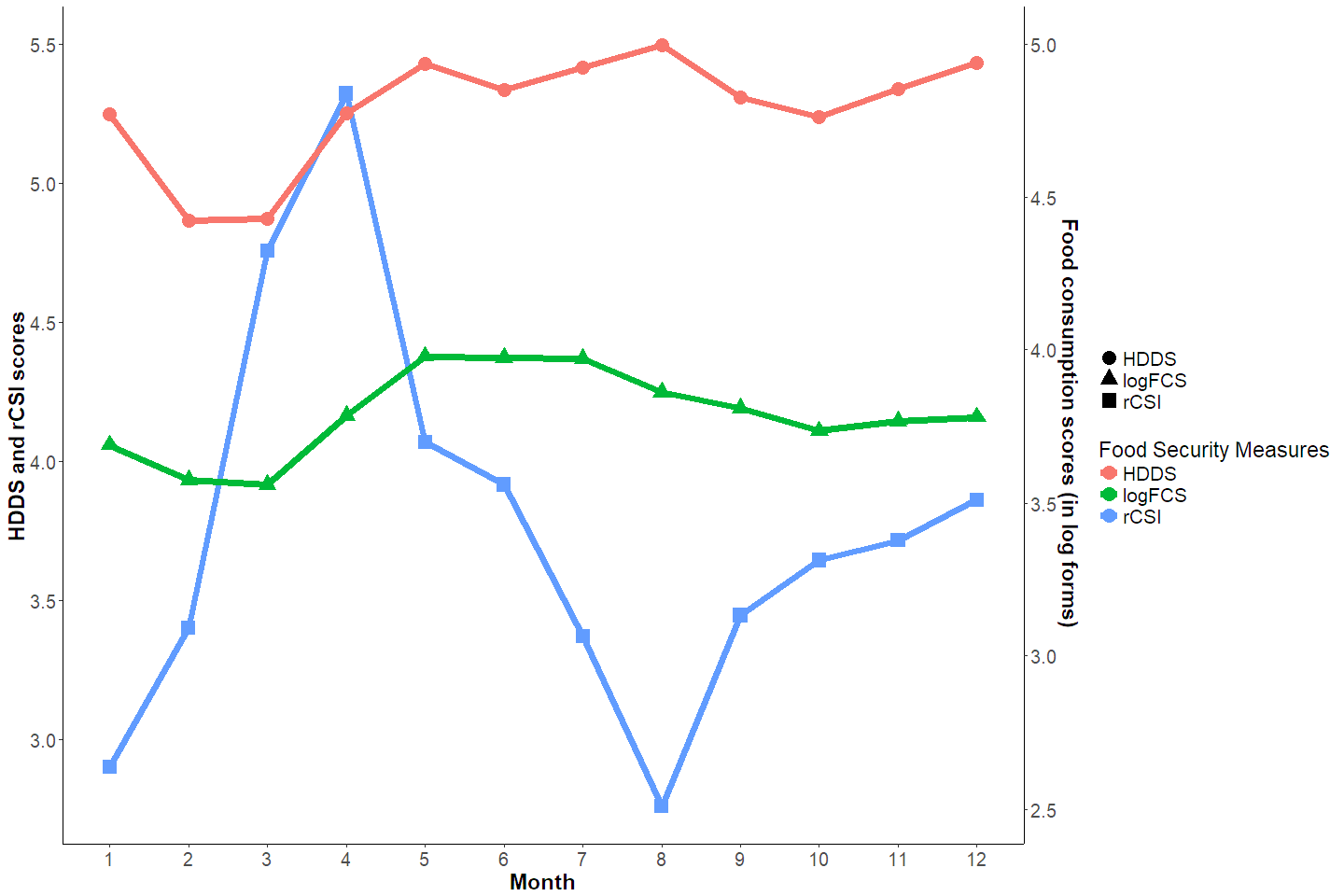
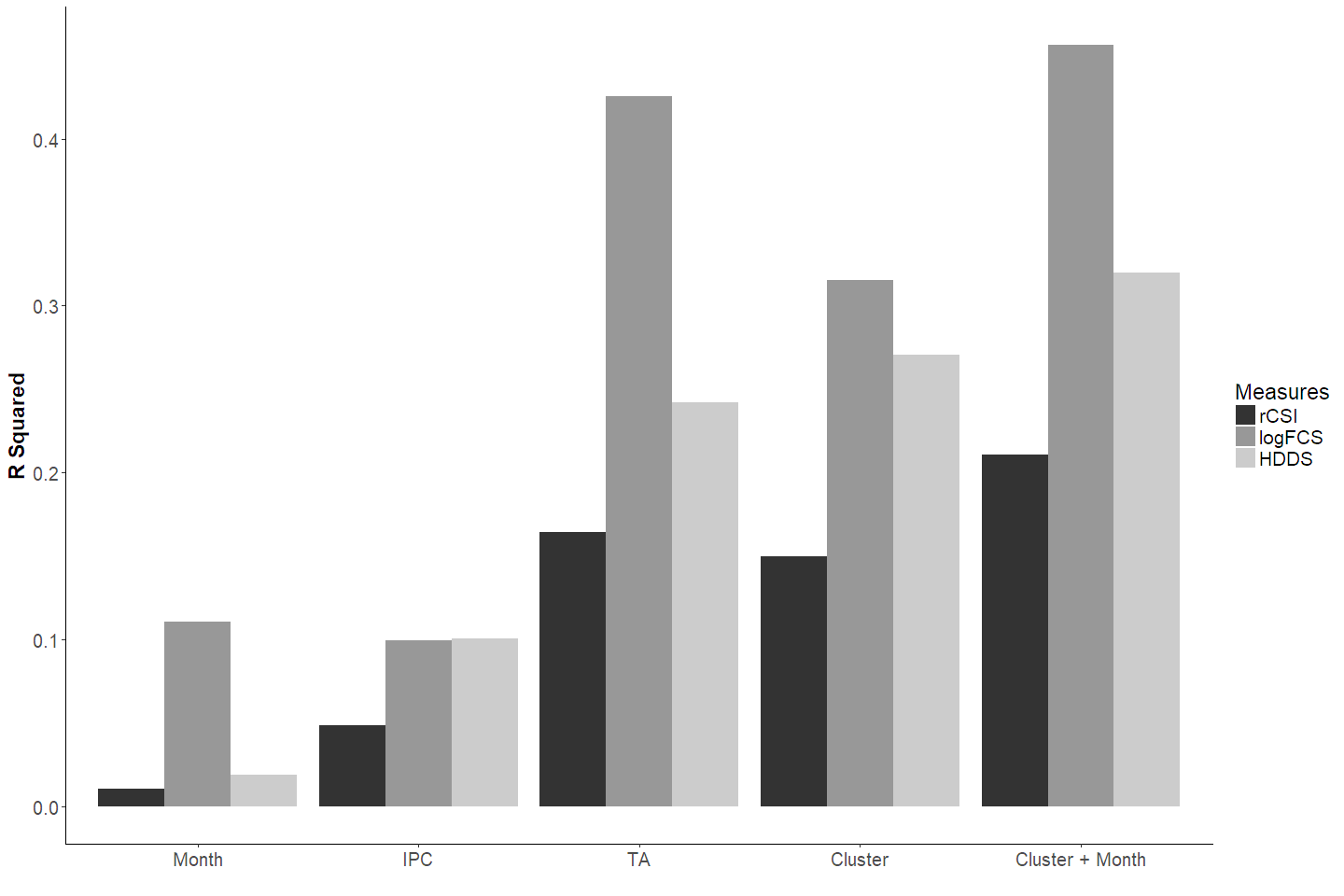
Result\_writeup

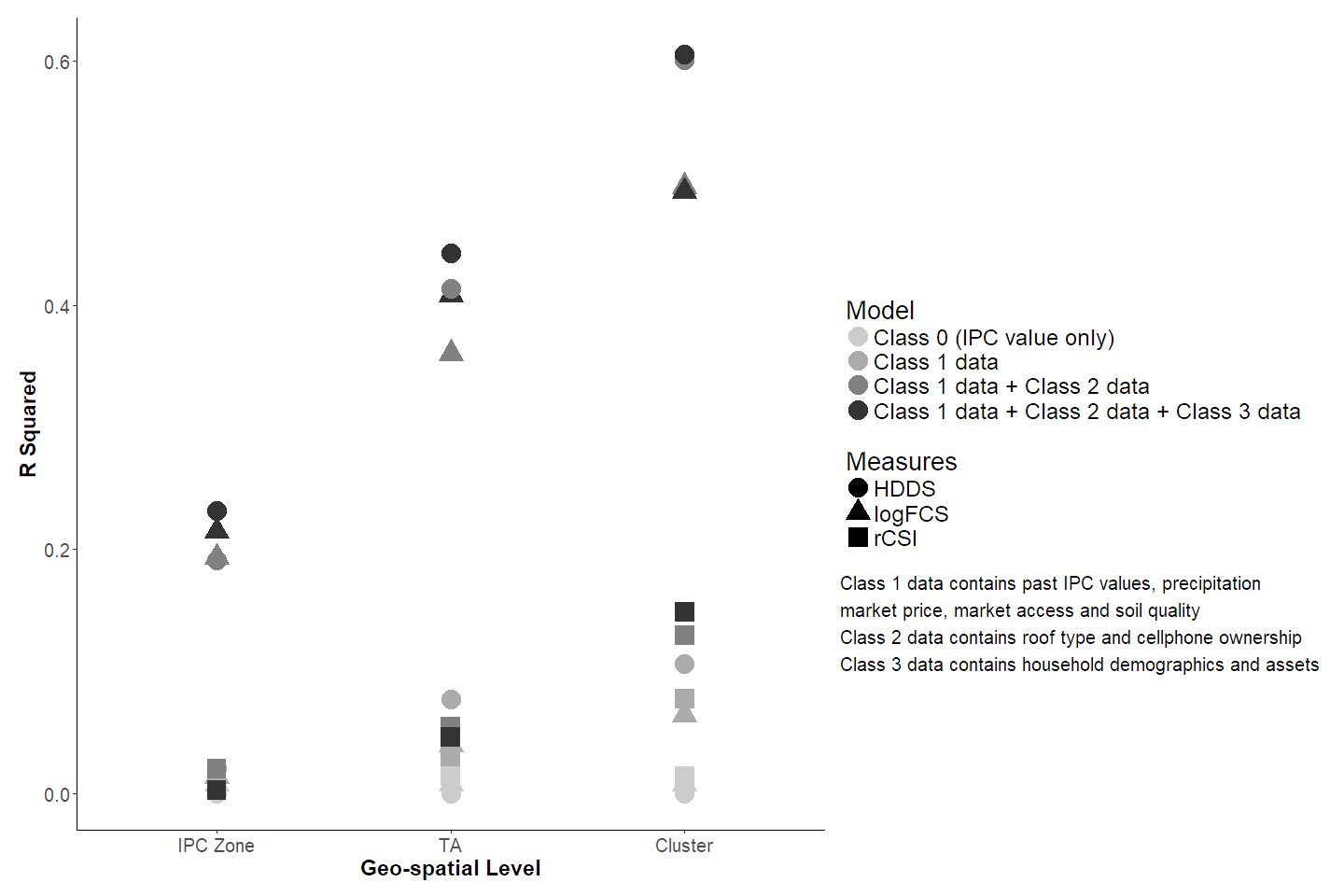
1. summary stats (pooled data of 2010 and 2013)
2. FS by month plot

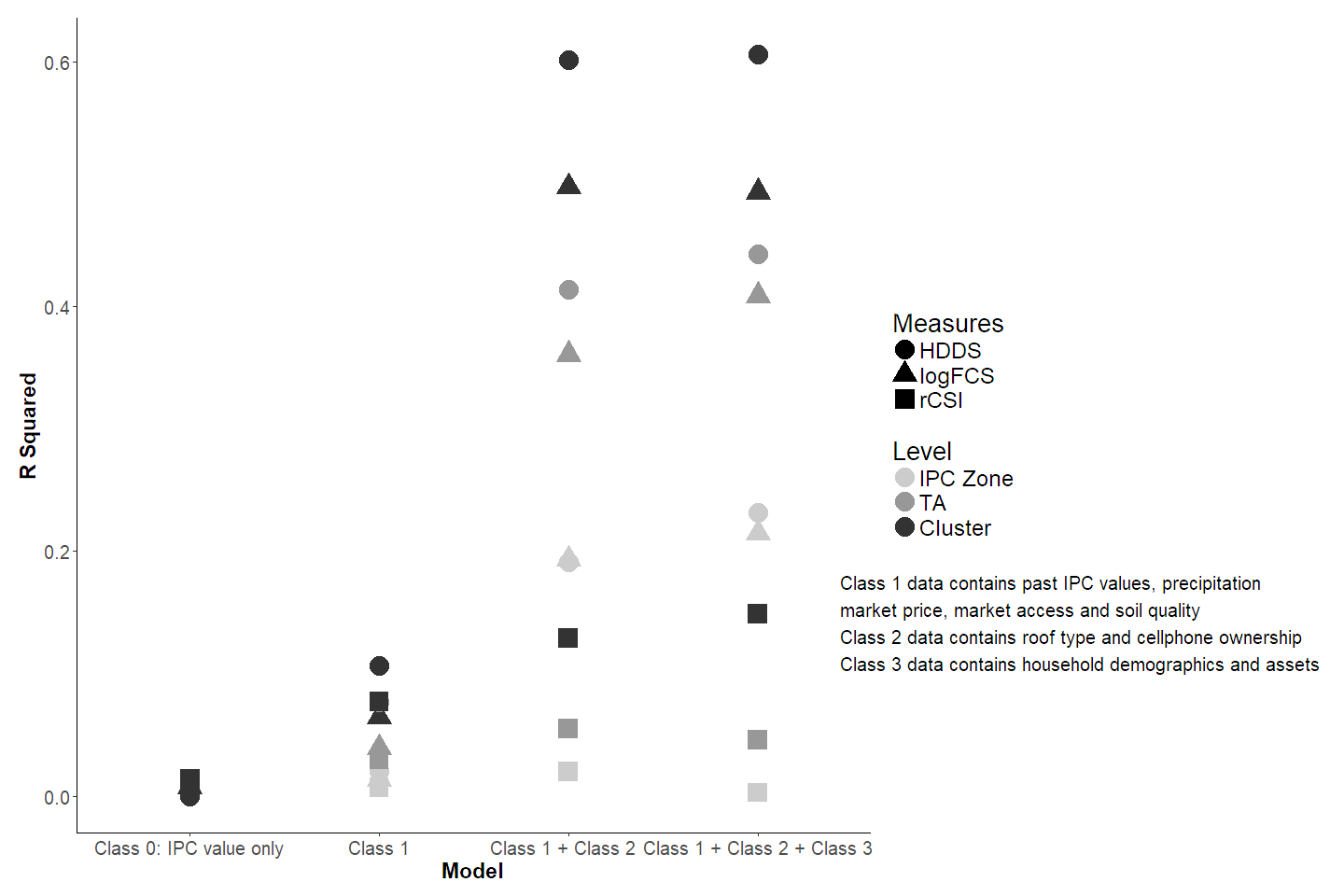


1. bar chart of variation

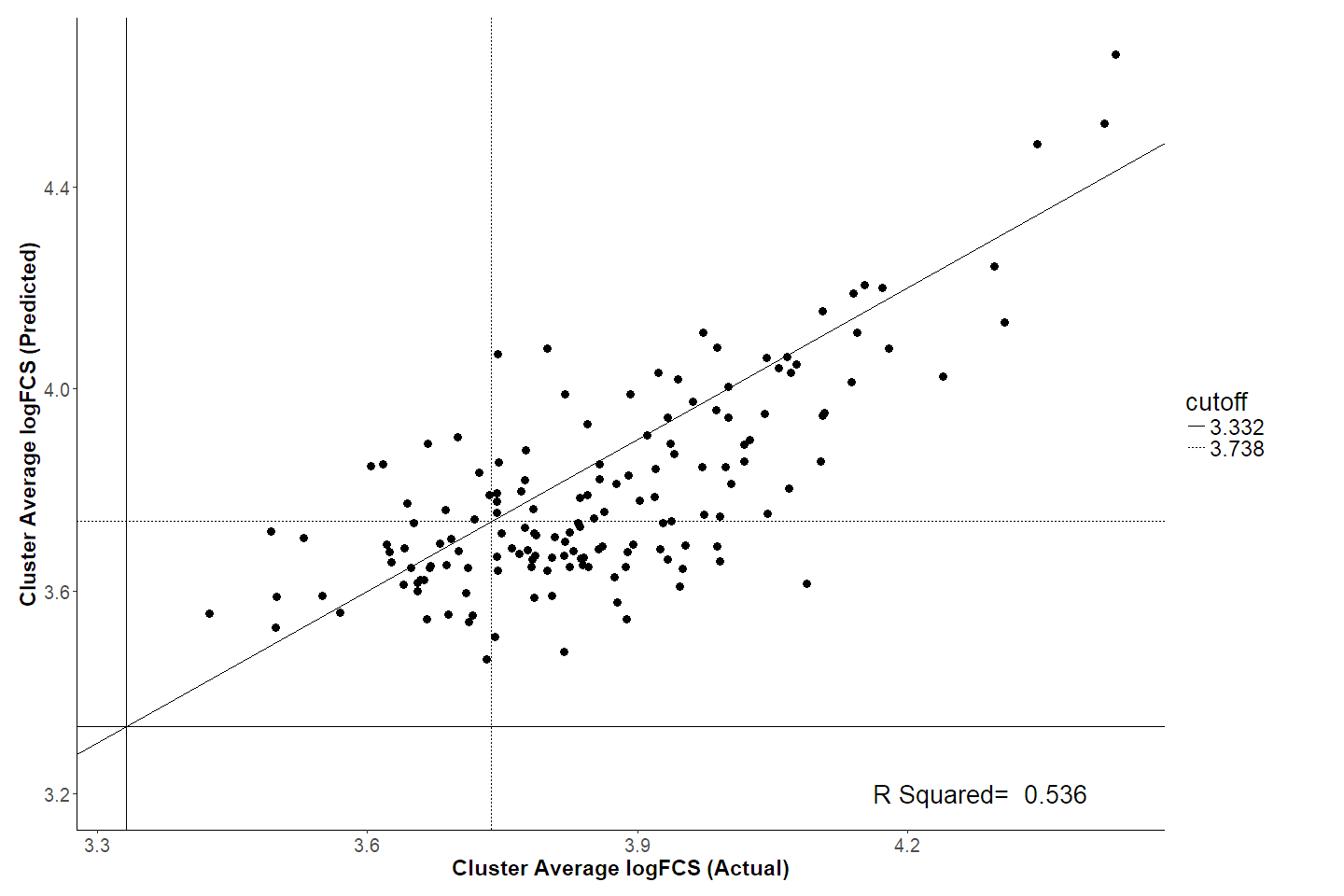


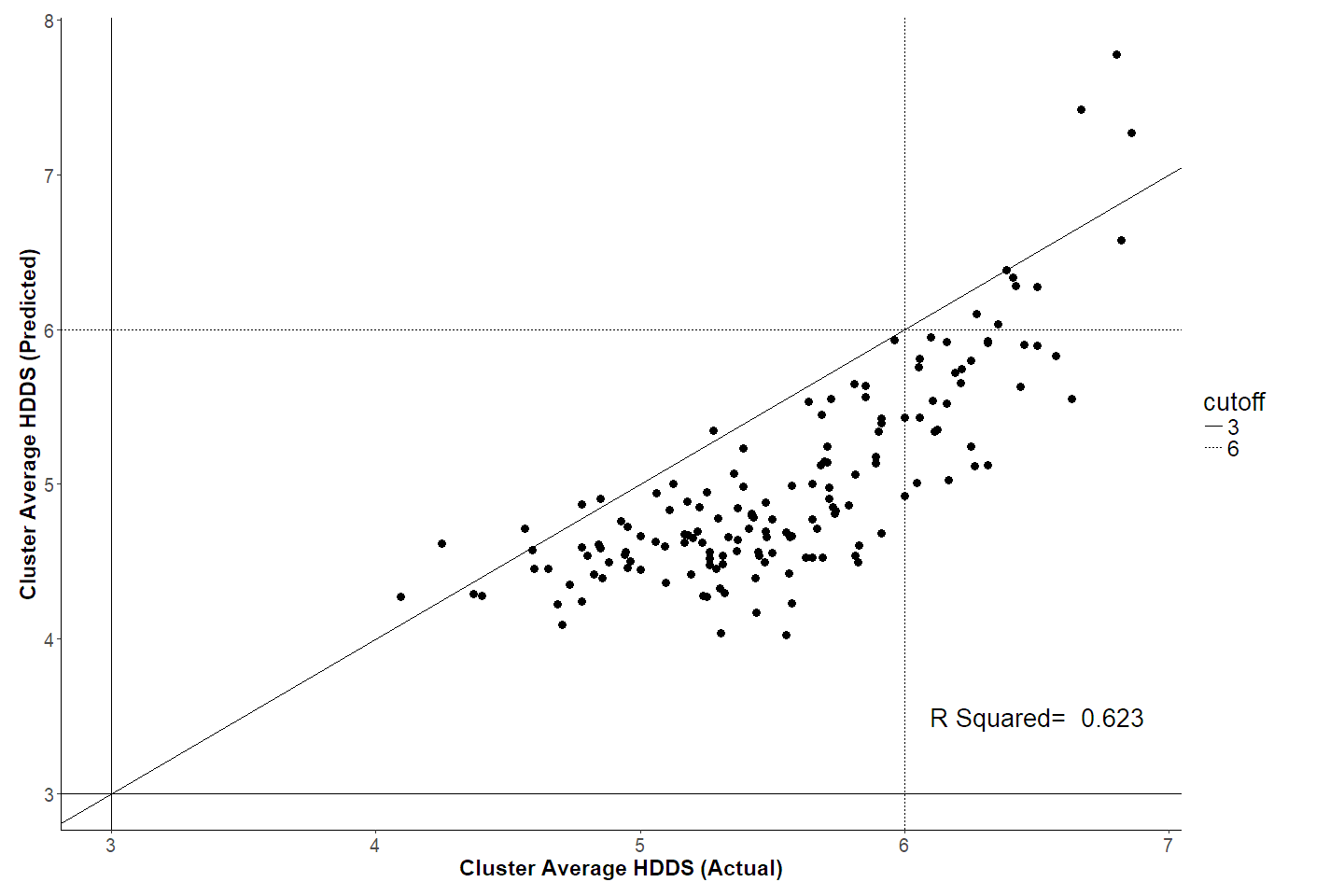
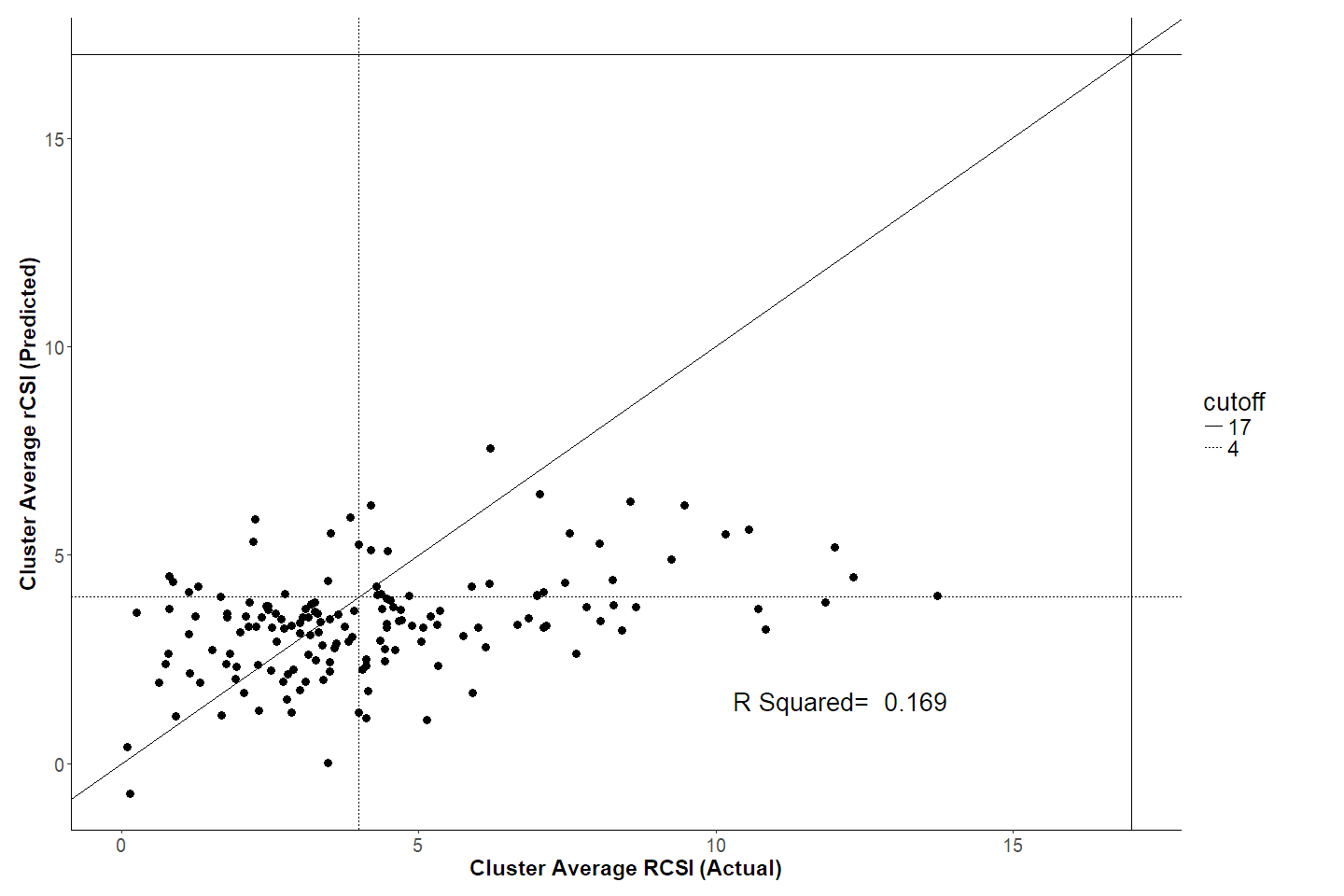
1. Result of 2013 prediction
2. R square plot



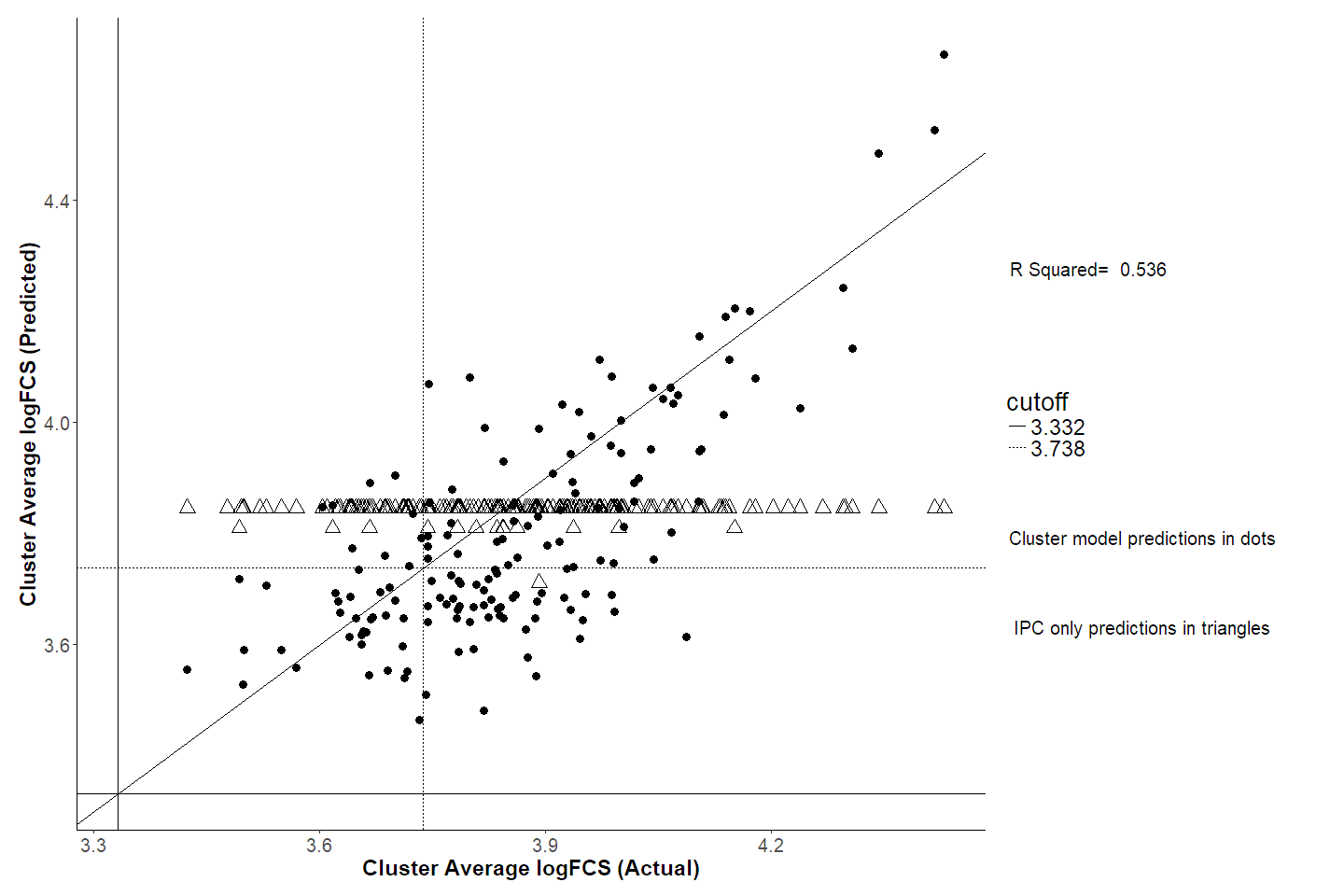


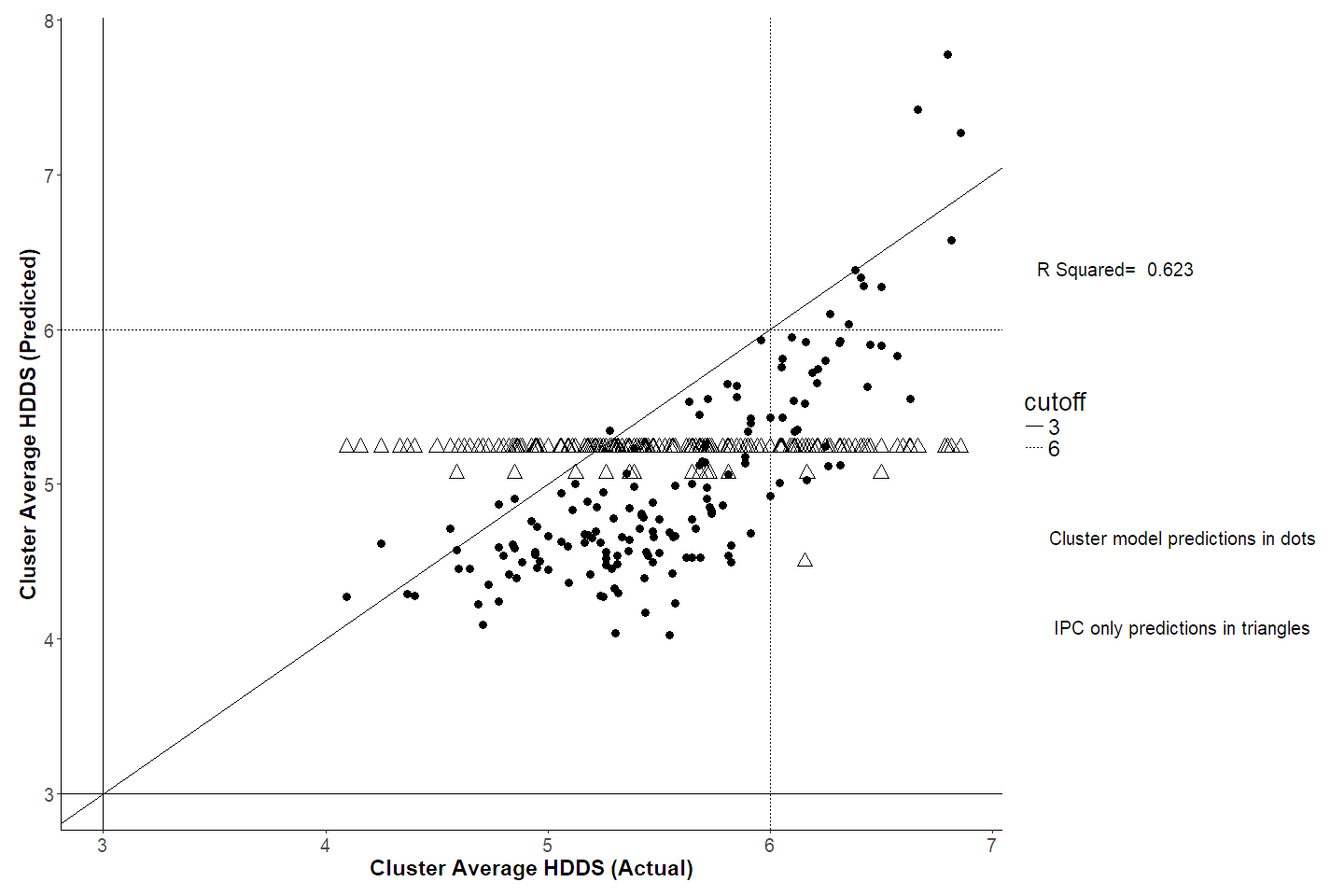
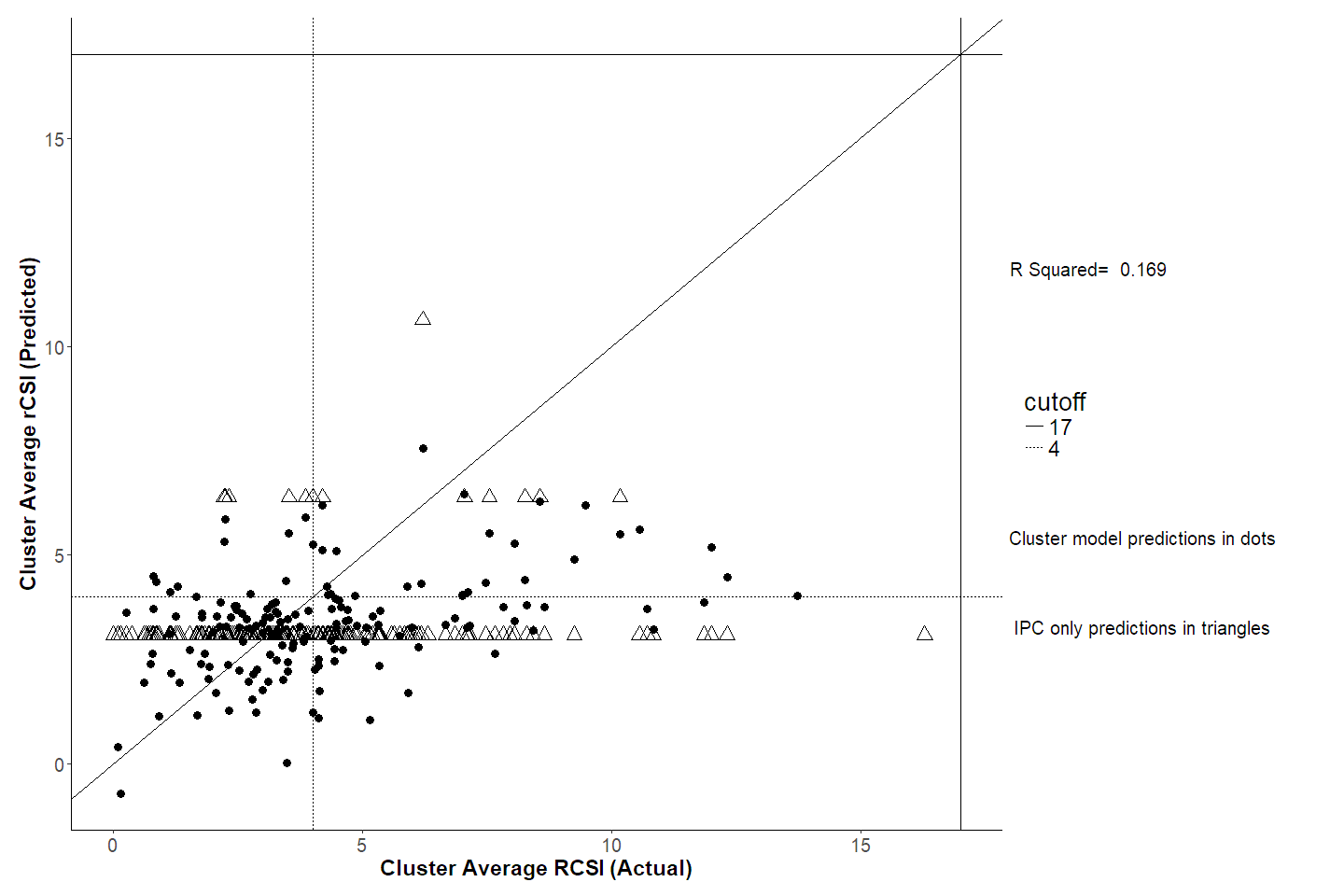
1. Scatter plots (predict vs. actual)



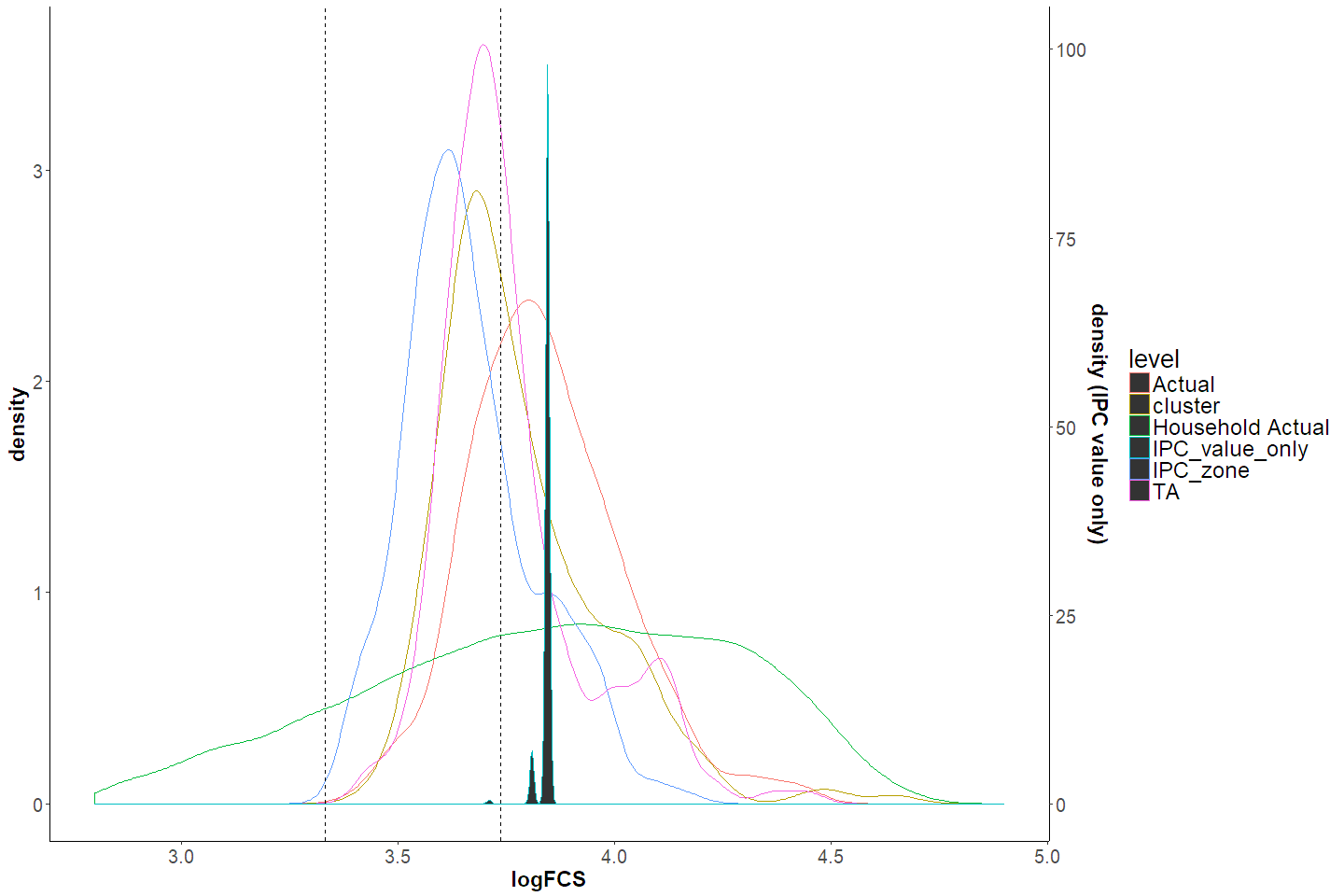


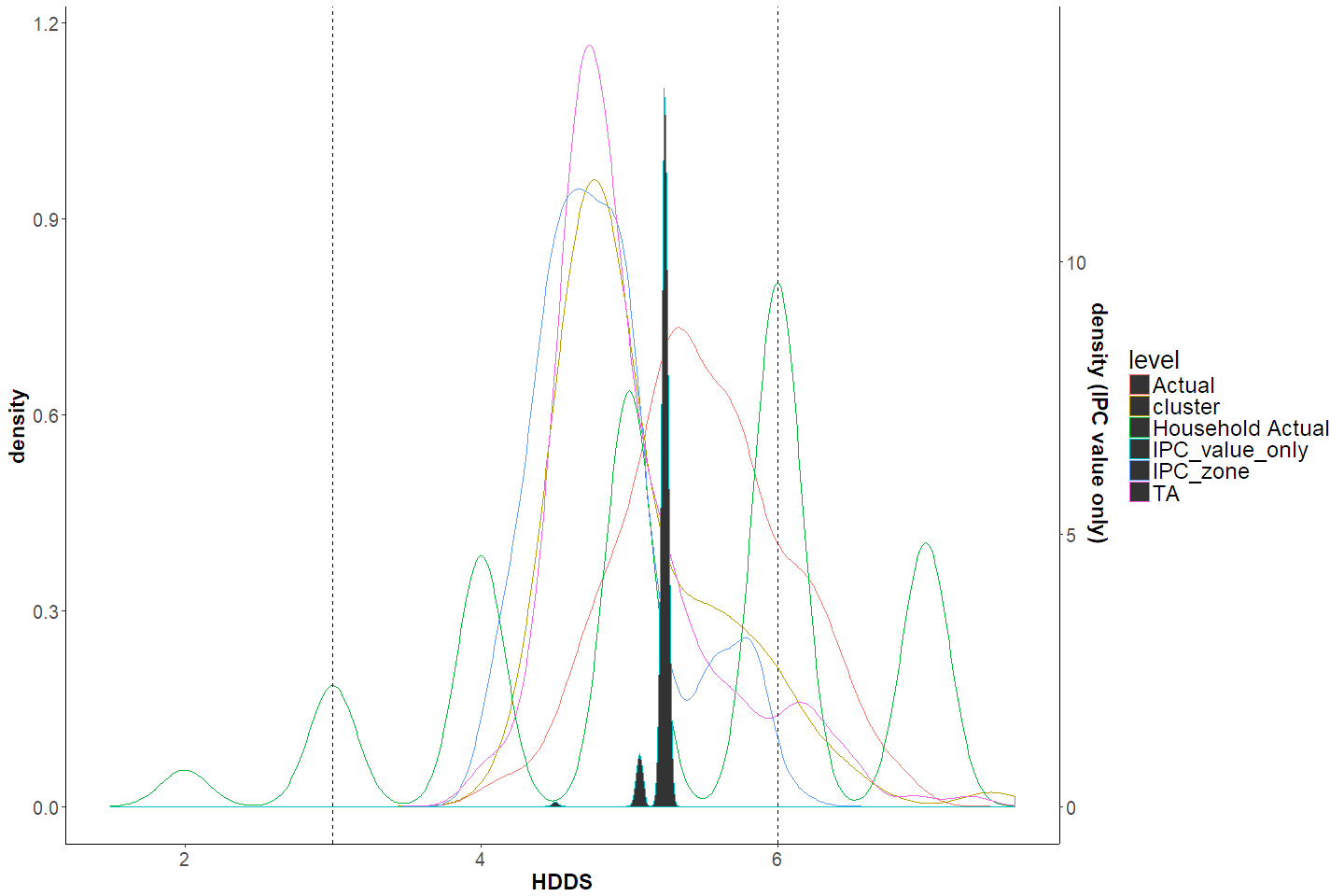
1. Scatter plots (predict vs. actual) plus ipc only value

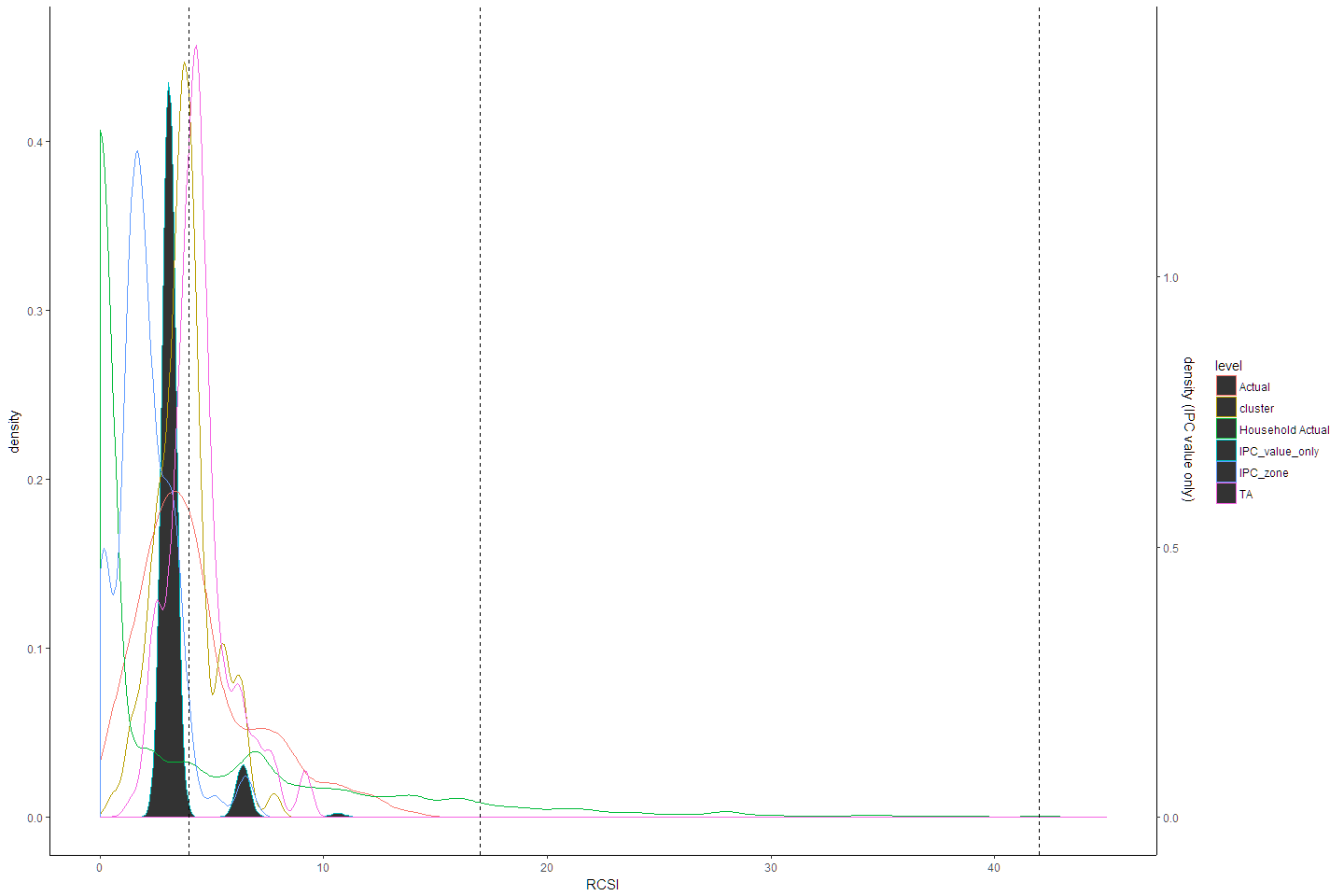




1. Density plot (predication using different scales + household)
   1. Unexplored variation of household level







1. Discussion of classification
2. hit and miss tables (for the predications)
   1. one is cluster to actual cluster outcomes

## Loading required package: lattice

## [1] "logFCS confusionMatrix"

## Confusion Matrix and Statistics  
##   
## Reference  
## Prediction Poor Borderline Acceptable  
## Poor 0 0 0  
## Borderline 0 31 50  
## Acceptable 0 9 66  
##   
## Overall Statistics  
##   
## Accuracy : 0.6218   
## 95% CI : (0.5408, 0.6981)  
## No Information Rate : 0.7436   
## P-Value [Acc > NIR] : 0.9997   
##   
## Kappa : 0.2575   
## Mcnemar's Test P-Value : NA   
##   
## Statistics by Class:  
##   
## Class: Poor Class: Borderline Class: Acceptable  
## Sensitivity NA 0.7750 0.5690  
## Specificity 1 0.5690 0.7750  
## Pos Pred Value NA 0.3827 0.8800  
## Neg Pred Value NA 0.8800 0.3827  
## Prevalence 0 0.2564 0.7436  
## Detection Rate 0 0.1987 0.4231  
## Detection Prevalence 0 0.5192 0.4808  
## Balanced Accuracy NA 0.6720 0.6720

## [1] "HDDS confusionMatrix"

## Confusion Matrix and Statistics  
##   
## Reference  
## Prediction Low Diversity Medium Diversity Good Diversity  
## Low Diversity 0 0 0  
## Medium Diversity 0 120 20  
## Good Diversity 0 1 15  
##   
## Overall Statistics  
##   
## Accuracy : 0.8654   
## 95% CI : (0.8016, 0.9147)  
## No Information Rate : 0.7756   
## P-Value [Acc > NIR] : 0.003282   
##   
## Kappa : 0.5208   
## Mcnemar's Test P-Value : NA   
##   
## Statistics by Class:  
##   
## Class: Low Diversity Class: Medium Diversity  
## Sensitivity NA 0.9917  
## Specificity 1 0.4286  
## Pos Pred Value NA 0.8571  
## Neg Pred Value NA 0.9375  
## Prevalence 0 0.7756  
## Detection Rate 0 0.7692  
## Detection Prevalence 0 0.8974  
## Balanced Accuracy NA 0.7102  
## Class: Good Diversity  
## Sensitivity 0.42857  
## Specificity 0.99174  
## Pos Pred Value 0.93750  
## Neg Pred Value 0.85714  
## Prevalence 0.22436  
## Detection Rate 0.09615  
## Detection Prevalence 0.10256  
## Balanced Accuracy 0.71015

## [1] "RCSI confusionMatrix"

## Confusion Matrix and Statistics  
##   
## Reference  
## Prediction Food Secure Mild Moderate Severe  
## Food Secure 69 37 0 0  
## Mild 18 32 0 0  
## Moderate 0 0 0 0  
## Severe 0 0 0 0  
##   
## Overall Statistics  
##   
## Accuracy : 0.6474   
## 95% CI : (0.567, 0.7221)  
## No Information Rate : 0.5577   
## P-Value [Acc > NIR] : 0.01417   
##   
## Kappa : 0.2644   
## Mcnemar's Test P-Value : NA   
##   
## Statistics by Class:  
##   
## Class: Food Secure Class: Mild Class: Moderate  
## Sensitivity 0.7931 0.4638 NA  
## Specificity 0.4638 0.7931 1  
## Pos Pred Value 0.6509 0.6400 NA  
## Neg Pred Value 0.6400 0.6509 NA  
## Prevalence 0.5577 0.4423 0  
## Detection Rate 0.4423 0.2051 0  
## Detection Prevalence 0.6795 0.3205 0  
## Balanced Accuracy 0.6284 0.6284 NA  
## Class: Severe  
## Sensitivity NA  
## Specificity 1  
## Pos Pred Value NA  
## Neg Pred Value NA  
## Prevalence 0  
## Detection Rate 0  
## Detection Prevalence 0  
## Balanced Accuracy NA

1. cluster predication to actual household level outcomes

## [1] "logFCS confusionMatrix"

## Confusion Matrix and Statistics  
##   
## Reference  
## Prediction Poor Borderline Acceptable  
## Poor 0 0 0  
## Borderline 172 436 637  
## Acceptable 73 245 920  
##   
## Overall Statistics  
##   
## Accuracy : 0.5461   
## 95% CI : (0.5263, 0.5658)  
## No Information Rate : 0.6271   
## P-Value [Acc > NIR] : 1   
##   
## Kappa : 0.1745   
## Mcnemar's Test P-Value : <2e-16   
##   
## Statistics by Class:  
##   
## Class: Poor Class: Borderline Class: Acceptable  
## Sensitivity 0.00000 0.6402 0.5909  
## Specificity 1.00000 0.5511 0.6566  
## Pos Pred Value NaN 0.3502 0.7431  
## Neg Pred Value 0.90133 0.8021 0.4884  
## Prevalence 0.09867 0.2743 0.6271  
## Detection Rate 0.00000 0.1756 0.3705  
## Detection Prevalence 0.00000 0.5014 0.4986  
## Balanced Accuracy 0.50000 0.5956 0.6237

## [1] "HDDS confusionMatrix"

## Confusion Matrix and Statistics  
##   
## Reference  
## Prediction Low Diversity Medium Diversity Good Diversity  
## Low Diversity 0 0 0  
## Medium Diversity 246 1709 368  
## Good Diversity 1 55 104  
##   
## Overall Statistics  
##   
## Accuracy : 0.7302   
## 95% CI : (0.7122, 0.7475)  
## No Information Rate : 0.7104   
## P-Value [Acc > NIR] : 0.01548   
##   
## Kappa : 0.1649   
## Mcnemar's Test P-Value : < 2e-16   
##   
## Statistics by Class:  
##   
## Class: Low Diversity Class: Medium Diversity  
## Sensitivity 0.00000 0.9688  
## Specificity 1.00000 0.1460  
## Pos Pred Value NaN 0.7357  
## Neg Pred Value 0.90052 0.6562  
## Prevalence 0.09948 0.7104  
## Detection Rate 0.00000 0.6883  
## Detection Prevalence 0.00000 0.9356  
## Balanced Accuracy 0.50000 0.5574  
## Class: Good Diversity  
## Sensitivity 0.22034  
## Specificity 0.97215  
## Pos Pred Value 0.65000  
## Neg Pred Value 0.84158  
## Prevalence 0.19009  
## Detection Rate 0.04188  
## Detection Prevalence 0.06444  
## Balanced Accuracy 0.59625

## [1] "RCSI confusionMatrix"

## Confusion Matrix and Statistics  
##   
## Reference  
## Prediction Food Secure Mild Moderate Severe   
## Food Secure 1463 352 61 0  
## Mild 408 147 52 0  
## Moderate 0 0 0 0  
## Severe 0 0 0 0  
##   
## Overall Statistics  
##   
## Accuracy : 0.6484   
## 95% CI : (0.6293, 0.6672)  
## No Information Rate : 0.7535   
## P-Value [Acc > NIR] : 1   
##   
## Kappa : 0.0785   
## Mcnemar's Test P-Value : NA   
##   
## Statistics by Class:  
##   
## Class: Severe Class: Moderate Class: Mild  
## Sensitivity 0.7819 0.2946 0.00000  
## Specificity 0.3252 0.7681 1.00000  
## Pos Pred Value 0.7799 0.2422 NaN  
## Neg Pred Value 0.3278 0.8124 0.95449  
## Prevalence 0.7535 0.2010 0.04551  
## Detection Rate 0.5892 0.0592 0.00000  
## Detection Prevalence 0.7555 0.2445 0.00000  
## Balanced Accuracy 0.5535 0.5314 0.50000  
## Class: Food Secure  
## Sensitivity NA  
## Specificity 1  
## Pos Pred Value NA  
## Neg Pred Value NA  
## Prevalence 0  
## Detection Rate 0  
## Detection Prevalence 0  
## Balanced Accuracy NA