Teste F-Fisher - General

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2023-01-14

Lendo lm_smells

```
lm_smells <- read.csv(file = 'C:\\Users\\audre\\Desktop\\tcc\\general\\all_lm.csv')
```

Lendo lem_smells

```
lmfe_smells <- read.csv(file = 'C:\\Users\\audre\\Desktop\\tcc\\general\\all_lem.csv')
```

Teste F-Fisher

```
var.test(lm_smells$metrics.MethodEffectiveLinesOfCode, lmfe_smells$metrics.MethodEffectiveLinesOfCode, a
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.MethodEffectiveLinesOfCode and lmfe_smells$metrics.MethodEffectiveLinesOfCo
## F = 11.77, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  11.08397 12.49694
## sample estimates:
## ratio of variances
##           11.77026
```

```
var.test(lm_smells$metrics.NumberOfFinallyStatements, lmfe_smells$metrics.NumberOfFinallyStatements, al
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.NumberOfFinallyStatements and lmfe_smells$metrics.NumberOfFinallyStatements
## F = 2.8806, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  2.712611 3.058408
## sample estimates:
## ratio of variances
##           2.880568
```

```
var.test(lm_smells$metrics.NumberOfCatchStatements, lmfe_smells$metrics.NumberOfCatchStatements, alterna
```

```
##
##  F test to compare two variances
##
```

```
## data:  lm_smells$metrics.NumberOfCatchStatements and lmfe_smells$metrics.NumberOfCatchStatements
## F = 2.7039, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  2.546221 2.870807
## sample estimates:
## ratio of variances
##           2.703876
```

```
var.test(lm_smells$metrics.ExceptionalLOC, lmfe_smells$metrics.ExceptionalLOC, alternative = "two.sided
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.ExceptionalLOC and lmfe_smells$metrics.ExceptionalLOC
## F = 1.5438, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  1.453791 1.639117
## sample estimates:
## ratio of variances
##           1.543806
```

```
var.test(lm_smells$metrics.NumberOfDummyExceptionHandlers, lmfe_smells$metrics.NumberOfDummyExceptionHa
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.NumberOfDummyExceptionHandlers and lmfe_smells$metrics.NumberOfDummyExceptio
## F = 4.5391, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  4.274468 4.819368
## sample estimates:
## ratio of variances
##           4.539131
```

```
var.test(lm_smells$metrics.NumberOfTryStatements, lmfe_smells$metrics.NumberOfTryStatements, alternativ
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.NumberOfTryStatements and lmfe_smells$metrics.NumberOfTryStatements
## F = 1.4305, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  1.347128 1.518857
## sample estimates:
## ratio of variances
##           1.430539
```

```
var.test(lm_smells$metrics.NumberOfThrowStatements, lmfe_smells$metrics.NumberOfThrowStatements, alterna
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.NumberOfThrowStatements and lmfe_smells$metrics.NumberOfThrowStatements
```

```
## F = 0.5987, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.5637959 0.6356674
## sample estimates:
## ratio of variances
##          0.5987046
```

```
var.test(lm_smells$metrics.NumberOfTryStatementsWithNoCatchAndFinally, lmfe_smells$metrics.NumberOfTryS
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.NumberOfTryStatementsWithNoCatchAndFinally and lmfe_smells$metrics.NumberOf
## F = 0.48252, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.4543904 0.5123151
## sample estimates:
## ratio of variances
##           0.482525
```

```
var.test(lm_smells$metrics.ThrownExceptionTypesCount, lmfe_smells$metrics.ThrownExceptionTypesCount, al
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.ThrownExceptionTypesCount and lmfe_smells$metrics.ThrownExceptionTypesCount
## F = 1.0589, num df = 4706, denom df = 3909, p-value = 0.06166
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.9972056 1.1243272
## sample estimates:
## ratio of variances
##            1.05895
```

```
var.test(lm_smells$metrics.changingClasses, lmfe_smells$metrics.changingClasses, alternative = "two.sid
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.changingClasses and lmfe_smells$metrics.changingClasses
## F = 0.24746, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.2330292 0.2627352
## sample estimates:
## ratio of variances
##          0.2474577
```

```
var.test(lm_smells$metrics.changingMethods, lmfe_smells$metrics.changingMethods, alternative = "two.sid
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.changingMethods and lmfe_smells$metrics.changingMethods
## F = 1.1914, num df = 4706, denom df = 3909, p-value = 1.191e-08
```

```
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  1.121895 1.264912
## sample estimates:
## ratio of variances
##            1.19136
```

```
var.test(lm_smells$metrics.couplingDispersion, lmfe_smells$metrics.couplingDispersion, alternative = "tw
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.couplingDispersion and lmfe_smells$metrics.couplingDispersion
## F = 3.4582, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  3.256559 3.671698
## sample estimates:
## ratio of variances
##           3.458196
```

```
var.test(lm_smells$metrics.couplingIntensity, lmfe_smells$metrics.couplingIntensity, alternative = "two
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.couplingIntensity and lmfe_smells$metrics.couplingIntensity
## F = 0.1458, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.1373014 0.1548043
## sample estimates:
## ratio of variances
##           0.1458027
```

```
var.test(lm_smells$metrics.cyclomaticComplexity, lmfe_smells$metrics.cyclomaticComplexity, alternative =
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.cyclomaticComplexity and lmfe_smells$metrics.cyclomaticComplexity
## F = 2.04, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  1.921066 2.165959
## sample estimates:
## ratio of variances
##           2.040013
```

```
var.test(lm_smells$metrics.maxCallChain, lmfe_smells$metrics.maxCallChain, alternative = "two.sided")
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.maxCallChain and lmfe_smells$metrics.maxCallChain
## F = 0.098069, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
```

```
## 95 percent confidence interval:
##  0.09235069 0.10412336
## sample estimates:
## ratio of variances
##         0.09806879
```

```
var.test(lm_smells$metrics.maxNesting, lmfe_smells$metrics.maxNesting, alternative = "two.sided")
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.maxNesting and lmfe_smells$metrics.maxNesting
## F = 0.50318, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.4738435 0.5342480
## sample estimates:
## ratio of variances
##          0.5031825
```

```
var.test(lm_smells$metrics.numberOfAccessedVariables, lmfe_smells$metrics.numberOfAccessedVariables, al
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.numberOfAccessedVariables and lmfe_smells$metrics.numberOfAccessedVariables
## F = 27.216, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  25.62924 28.89640
## sample estimates:
## ratio of variances
##           27.21613
```

```
var.test(lm_smells$metrics.parameterCount, lmfe_smells$metrics.parameterCount, alternative = "two.sided
```

```
##
##  F test to compare two variances
##
## data:  lm_smells$metrics.parameterCount and lmfe_smells$metrics.parameterCount
## F = 2.6188, num df = 4706, denom df = 3909, p-value < 2.2e-16
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  2.466130 2.780506
## sample estimates:
## ratio of variances
##           2.618825
```