

I love math but does she love me?

The analysis of PISA 2012 dataset.

Michał Futrega and Łukasz Rajkowski

Faculty of Mathematics, University of Warsaw

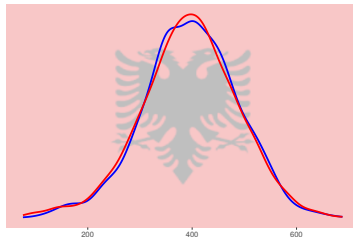
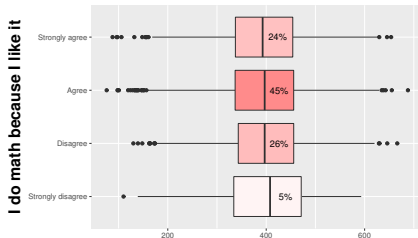
November 5, 2017

We observed that countries where the affection to mathematics goes hand in hand with test results is ranked higher than country where there is no such correlation.

List of countries

- | | | | |
|--------------------|---------------------|------------------------------|------------------------------|
| 1. Albania | 18. Finland | 35. Lithuania | 51. Serbia |
| 2. Argentina | 19. France | 36. Luxembourg | 52. Singapore |
| 3. Australia | 20. Germany | 37. Macao-China | 53. Slovak Republic |
| 4. Austria | 21. Greece | 38. Malaysia | 54. Slovenia |
| 5. Belgium | 22. Hong Kong-China | 39. Mexico | 55. Spain |
| 6. Brazil | 23. Hungary | 40. Montenegro | 56. Sweden |
| 7. Bulgaria | 24. Iceland | 41. Netherlands | 57. Switzerland |
| 8. Canada | 25. Indonesia | 42. New Zealand | 58. Thailand |
| 9. Chile | 26. Ireland | 43. Norway | 59. Tunisia |
| 10. China-Shanghai | 27. Israel | 44. Perm(Russian Federation) | 60. Turkey |
| 11. Chinese Taipei | 28. Italy | 45. Peru | 61. United Arab Emirates |
| 12. Colombia | 29. Japan | 46. Poland | 62. United Kingdom |
| 13. Costa Rica | 30. Jordan | 47. Portugal | 63. United States of America |
| 14. Croatia | 31. Kazakhstan | 48. Qatar | 64. Uruguay |
| 15. Czech Republic | 32. Korea | 49. Romania | 65. Vietnam |
| 16. Denmark | 33. Latvia | 50. Russian Federation | |
| 17. Estonia | 34. Liechtenstein | | |

Albania



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/f0a8b7cd53209ac03fe17441c6d671d5")
```

Density estimation of the test score within the groups of **(strong) likers** and **(strong) dislikers**.

```
aread("LRajkowski/pisa/42174f1d1ebcca0a9c1bf8b1998a8dbe")
```

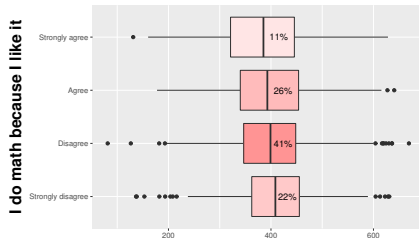


Albania mean score is **58** out of 65 countries

► Table of contests

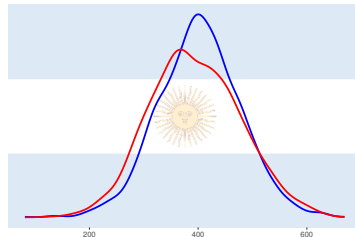
```
aread("LRajkowski/pisa/9b2abf709f330722d9cf30adfa4f0da1")
```

Argentina



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/41d541878cf9ad0f8187aa6965177abe")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/e08c205d0cef7e0de0d99e5bb411d6fd")
```

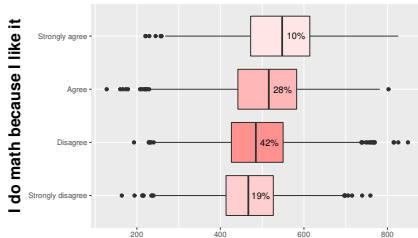


Argentina mean score is **57** out of 65 countries

```
aread("LRajkowski/pisa/9134e20d2ffe983c5323138e7992b091")
```

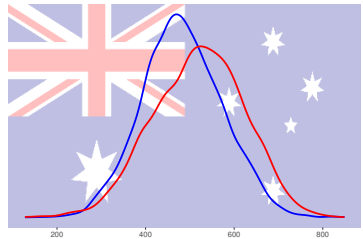
► Table of contests

Australia



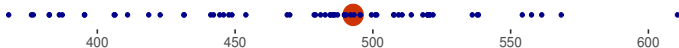
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/4a39316eacd72711284cb483dd845ee8")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/979258b6e10f5a28298e91062409d88b")
```

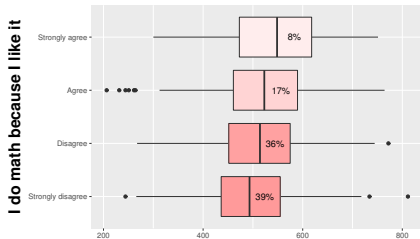


Australia mean score is **26** out of 65 countries

```
aread("LRajkowski/pisa/e21731ab17f8e53645a2beca76151a8a")
```

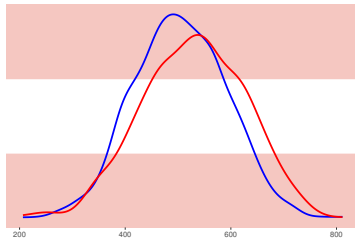
► Table of contests

Austria



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/907a5873dcdf259f6d2206f6d0baa007")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/87187a34a9f7d46a3a64db18a3b27db1")
```

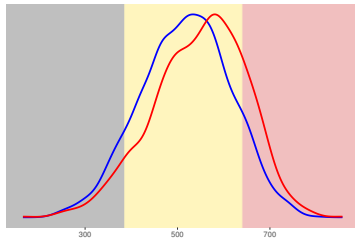
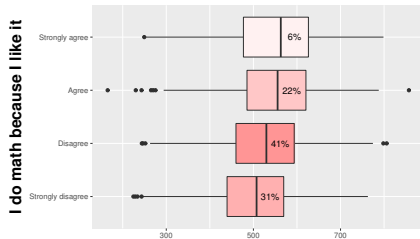


Austria mean score is **18** out of 65 countries

► Table of contests

```
aread("LRajkowski/pisa/f6a58903ef86da0c8bbde00dadfa40e8")
```

Belgium



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/8ce811e3854a75bc4a1ac84e087c94e8")
```

Density estimation of the test score within the groups of **(strong) likers** and **(strong) dislikers**.

```
aread("LRajkowski/pisa/098605d5f944ce9ffef35c953cf096d7")
```

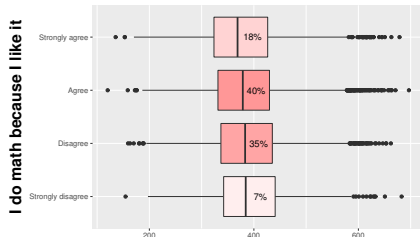


Belgium mean score is **12** out of 65 countries

```
aread("LRajkowski/pisa/6a199e925e1a43c075ee799090b57d8e")
```

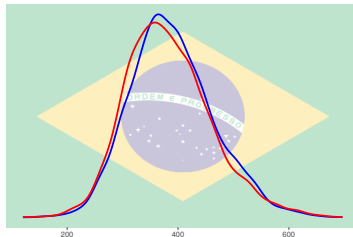
► Table of contests

Brazil



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/0be6e78a0b94b9c854dd7e215d1170c3")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/6653cc65c92895a77361d87dd52d56f2")
```

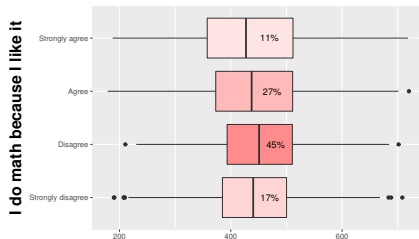


Brazil mean score is **62** out of 65 countries

```
aread("LRajkowski/pisa/d9253ddb47ab550f0e7b24823a77624d")
```

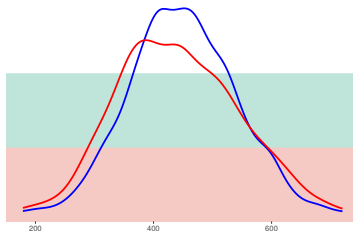
► Table of contests

Bulgaria



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/3a92eeb2891c13a19f505206a29b6c63")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/9d63188b173b5eaf8c7a541c5c74d6e2")
```

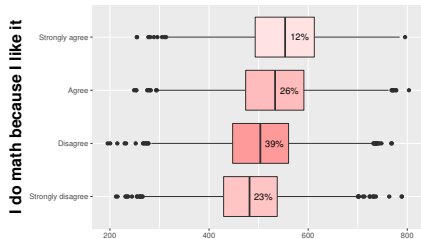


Bulgaria mean score is **48** out of 65 countries

```
aread("LRajkowski/pisa/851dc803700a5ad7d0a88957dce56fca")
```

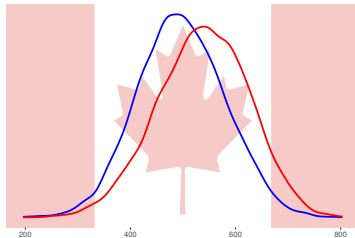
► Table of contests

Canada



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/eda6215dd92daf4dc01a93ffaf431fea")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/009a61a488f3d19c13e53cf289300236")
```

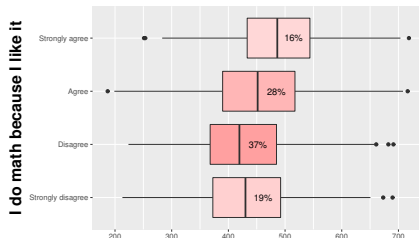


Canada mean score is **17** out of 65 countries

► Table of contests

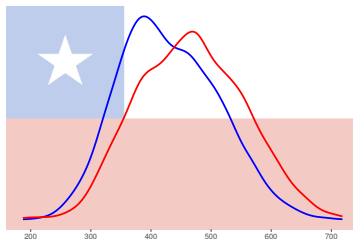
```
aread("LRajkowski/pisa/2573bf1cd544aaaa85b2f916f66fa4de")
```

Chile



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/4f501879ee880ffff6c20cc843052292")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/4a055e2974cf70d440f2df7f8620b997")
```

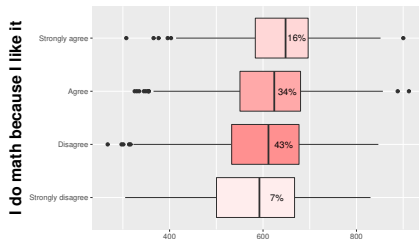


Chile mean score is **447** out of 65 countries

```
aread("LRajkowski/pisa/32cc197b7647c336e7f18012a9c97ea8")
```

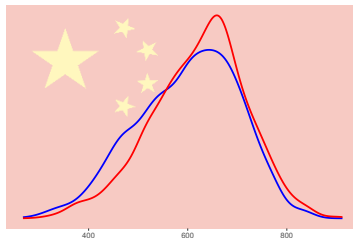
► Table of contests

China-Shanghai



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/6061136f27bf0e69bc8eaa3db2055ec9")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/bb5399ddf843a8988ffe53970f27d88a")
```

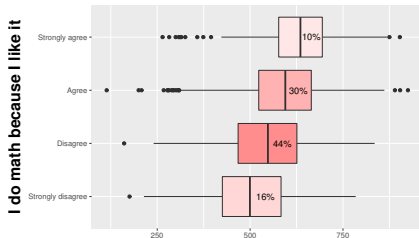


China-Shanghai mean score is **1** out of 65 countries

► Table of contests

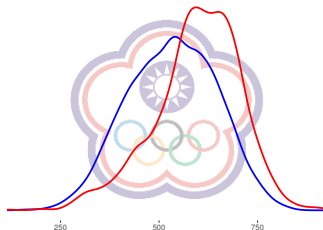
```
aread("LRajkowski/pisa/6473b8b25ac9067b575238daf8cbf5a6")
```

Chinese Taipei



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/c11577013207985b586dde1d0e246f5b")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/9428caed9c19bee40bc48cba3310d623")
```

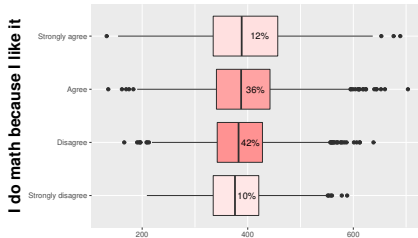


Chinese Taipei mean score is **4** out of 65 countries

► Table of contests

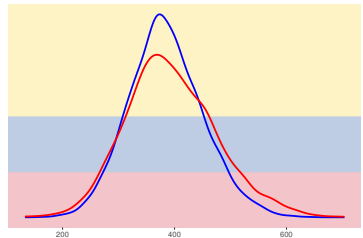
```
aread("LRajkowski/pisa/7e8ab4545aa40738fb578b62f3f94424")
```

Colombia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/ec837eeb41196a773f0a6fb04946d9cf")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/dd14f6df36293412cf58e61deff21898")
```

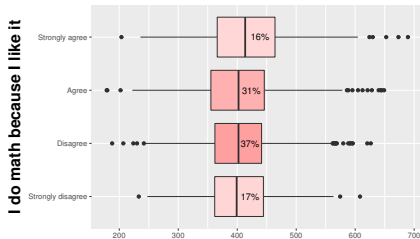


Colombia mean score is **60** out of 65 countries

```
aread("LRajkowski/pisa/0091a84f8fe07c7477d8fdc51796fbc3")
```

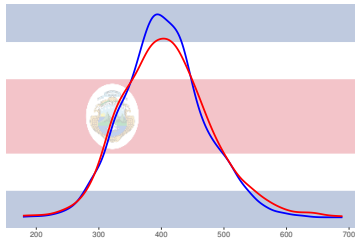
► Table of contests

Costa Rica



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/4c8650038f7468ee687bb08fc1921dd5")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/be7b1af4c5c8107b3f191a36ecd9704a")
```

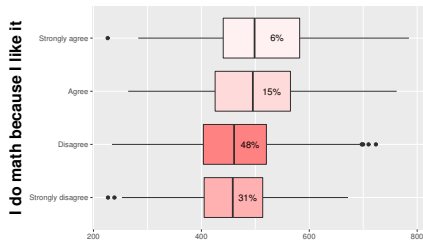


Costa Rica mean score is **56** out of 65 countries

► Table of contests

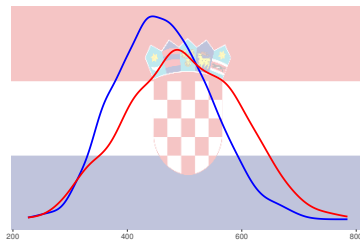
```
aread("LRajkowski/pisa/3ae781b856cb6e4522a99ee89ea2b110")
```

Croatia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/444bfa8fc0ef3792fd5d7f8a031ba93")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/81eaba6a42c6277a9c364d4d822fbc7a")
```

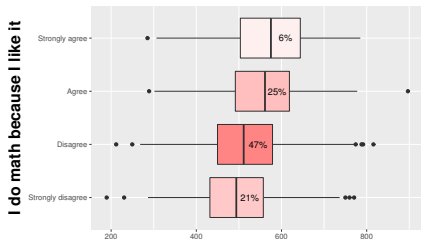


Croatia mean score is **41** out of 65 countries

```
aread("LRajkowski/pisa/9656a69c5fbe5960cbbb4744a68f68a9")
```

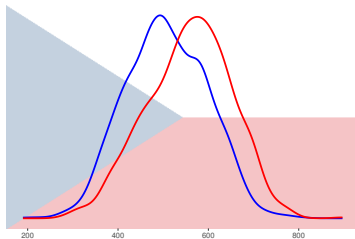
► Table of contests

Czech Republic



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/03edf752dec60fbd101071a70a251af")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/e92618c4196cbdb6996a80bfa9039461")
```

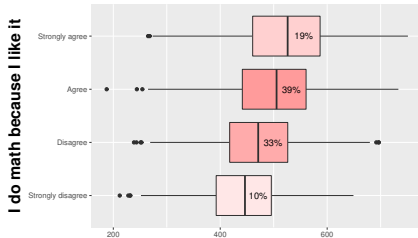


Czech Republic mean score is **13** out of 65 countries

► Table of contests

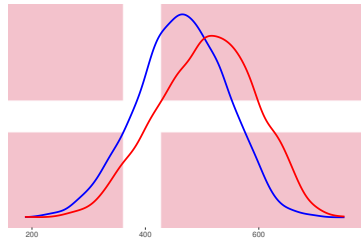
```
aread("LRajkowski/pisa/8c77949f442675f524077e6a18a06946")
```

Denmark



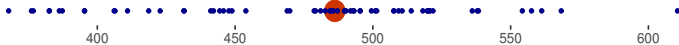
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/b4d758c8c817c1127eee376b0cfa80e6")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/ae5e316e27611ec8e65d60dd94bd9ae2")
```

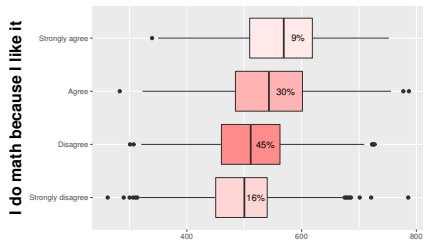


Denmark mean score is **32** out of 65 countries

```
aread("LRajkowski/pisa/63ec260ebfc61c46305177309e8e8318")
```

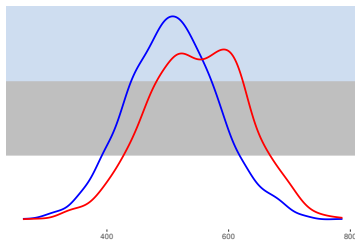
► Table of contests

Estonia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/7853ba2e9ab9cd2f445c4811ad27a690")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/a4804b765d17a581cf647d69b1f1f61f")
```

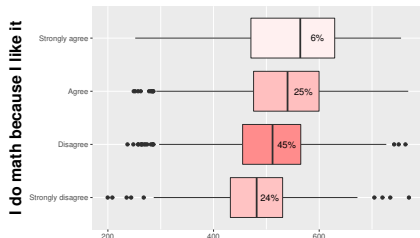


Estonia mean score is **9** out of 65 countries

```
aread("LRajkowski/pisa/795ff68d3b2f6734ef5b12ebb6dd28c7")
```

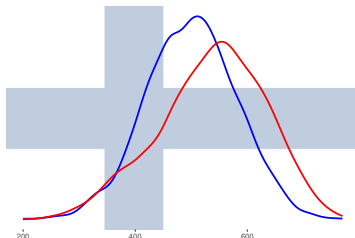
► Table of contests

Finland



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/f616157a648e7f3e28c011eed78be4")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/3f4d7bad4b0ec5219d264f494e667d38")
```

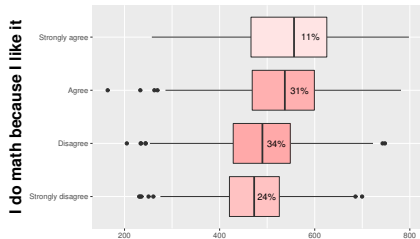


Finland mean score is **19** out of 65 countries

```
aread("LRajkowski/pisa/00f999fbbb6453413de7280715c09fca")
```

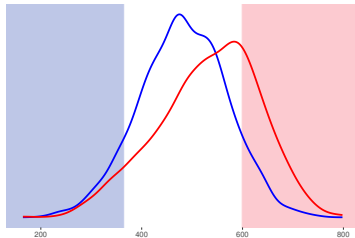
► Table of contests

France



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/c814eac7689476bafc97fe70c3dc3f4f")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/d536a80a3f4b48b67d75f805c770bd65")
```

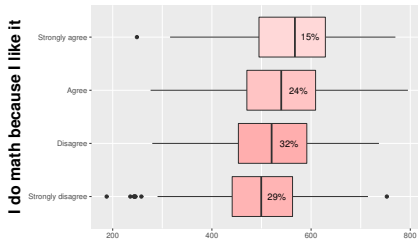


France mean score is **22** out of 65 countries

```
aread("LRajkowski/pisa/195d5e10d6574937cd0f490cc5b09047")
```

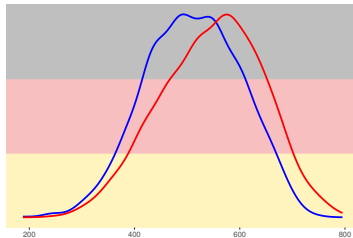
► Table of contests

Germany



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/0b9081879cf471564b15c7698d70bf3a")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/170c9156409fc16035562c8295455d09")
```

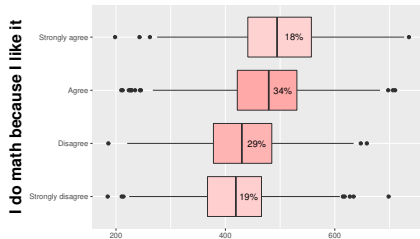


Germany mean score is **15** out of 65 countries

```
aread("LRajkowski/pisa/2e477cb809aa70dcf09825a708cd5954")
```

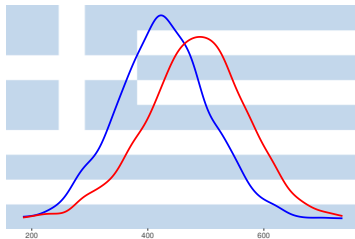
► Table of contests

Greece



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/a7fe8243603b28eed9feb7ecf6651cf")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/4b9e5143363c5a9d415a982aba9fdeb1")
```

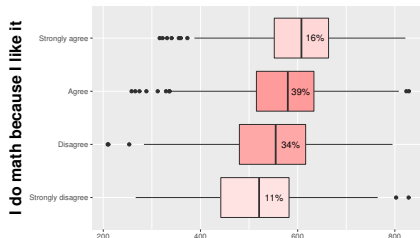


Greece mean score is **43** out of 65 countries

```
aread("LRajkowski/pisa/2ac1b30d24fc9279797a76463c4b7a93")
```

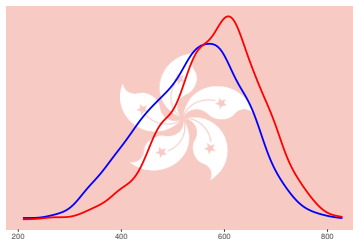
► Table of contests

Hong Kong-China



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/d556246ccb8cda938cb149b1ef127ae")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/becb5af268cc0f2eee8b07a4653617e4")
```

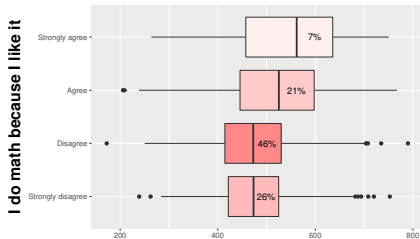


Hong Kong-China mean score is **3** out of 65 countries

► Table of contests

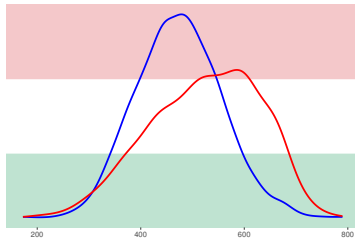
```
aread("LRajkowski/pisa/ffb0267f0c7bdb1d79361cd84539d917")
```


Hungary



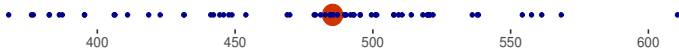
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/ddc5b4da543465dac0988b10747674b8")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/de5cff53290f00c9668c706bb7c0af09")
```

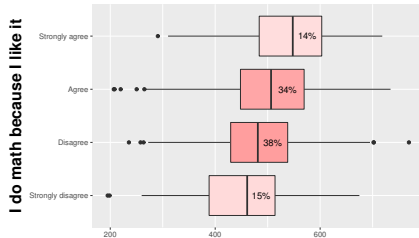


Hungary mean score is **34** out of 65 countries

► Table of contests

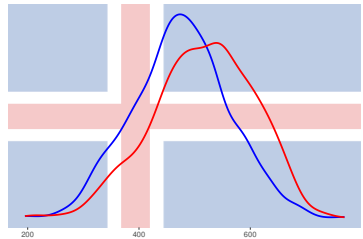
```
aread("LRajkowski/pisa/801b0121ed1a86ddab3e381386934382")
```

Iceland



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/b2618c884c8274e5796f3e6ee5b573e9")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/c28397d16686a5c3db94dc631752fd1e")
```

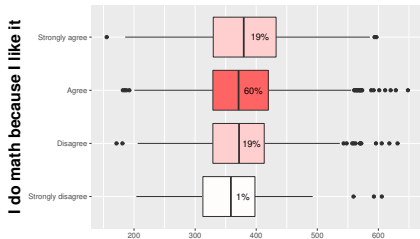


Iceland mean score is 25 out of 65 countries

```
aread("LRajkowski/pisa/088186f16eb473eff7279b5defd49b41")
```

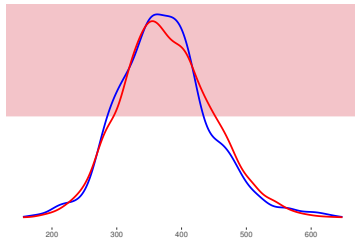
► Table of contests

Indonesia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/d686ffd21820651f4e300552ff3957eb")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/0441839df91edbf48b2d2b074ec42398")
```

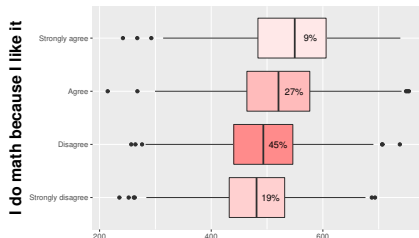


Indonesia mean score is **64** out of 65 countries

```
aread("LRajkowski/pisa/30a377fd918a35c60895e0138e5f6d58")
```

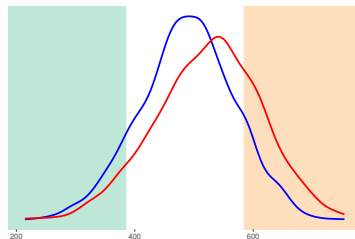
► Table of contests

Ireland



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/d4a5c0c2b17416565dc388bee809fac3")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/72cf4f2158d76ea32f65540e54f0223e")
```

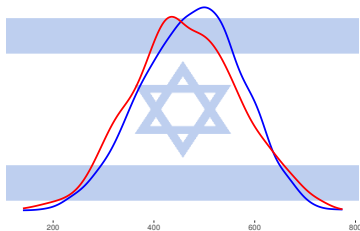
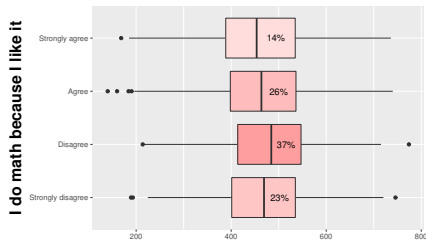


Ireland mean score is **21** out of 65 countries

```
aread("LRajkowski/pisa/2de50454734a5ea4efe16f17dbde6739")
```

► Table of contests

Israel



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/bbde6632cd14fd6662b48dded22af331")
```

Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/2f07ac39c391ac8a5e25f9b86732972c")
```

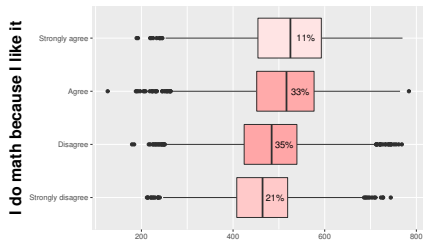


Israel mean score is **42** out of 65 countries

► Table of contests

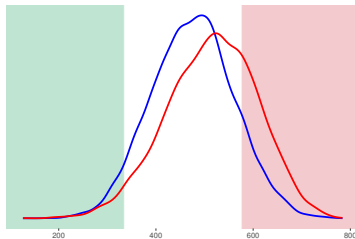
```
aread("LRajkowski/pisa/c601a751a515a116e707be2fd1cdd1fd")
```

Italy



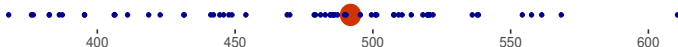
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/a44c65b6db938f6c5e9c3553cfd65a0")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/ae749ccc04245bd154aaaadad8d93682")
```

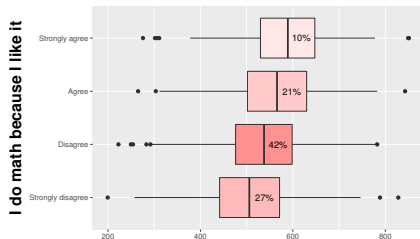


Italy mean score is **27** out of 65 countries

```
aread("LRajkowski/pisa/18477bfaec6ae63eeecb98bdb080d360")
```

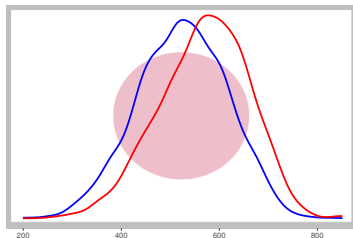
► Table of contests

Japan



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/7575e3082594f1b15f6fc294a2cb3697")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/cbca0673d556ebbbccce684dcd9b17534")
```

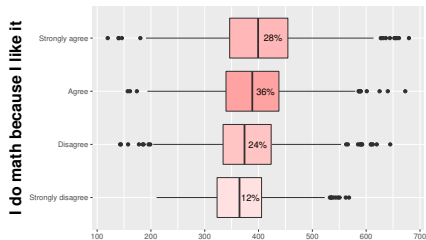


Japan mean score is **8** out of 65 countries

► Table of contests

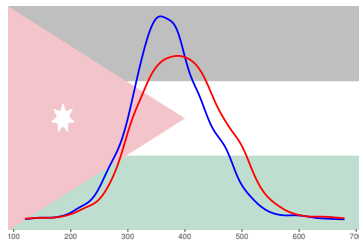
```
aread("LRajkowski/pisa/4a580ee74f0c8e598275f167449071c7")
```

Jordan



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/a2a3695015fe0745011daa49dd2aacd5")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/72217b853ea8d4d0c5adb6e21dccf6bb")
```

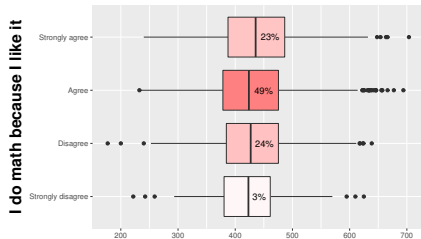


Jordan mean score is **61** out of 65 countries

► Table of contests

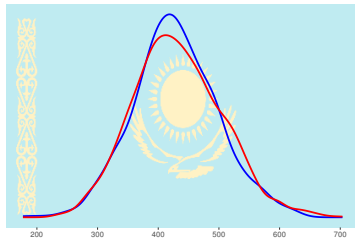
```
aread("LRajkowski/pisa/eee263c82c4023f92b8bad4232c37a19")
```


Kazakhstan



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/b9cdee836cc0e7995631f706d505cfcf")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/554e9dd2b25d1e75d60de2209925f31e")
```

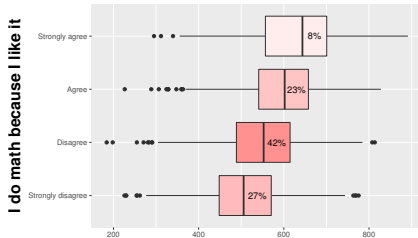


Kazakhstan mean score is **50** out of 65 countries

► Table of contests

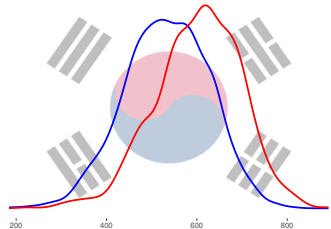
```
aread("LRajkowski/pisa/f7d211f2880af9f7f607bbfb713f8e08")
```

Korea



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/b6bb837a0101c19f62524d8566f7e152")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/c220789c396acd1907d685a74421afce")
```

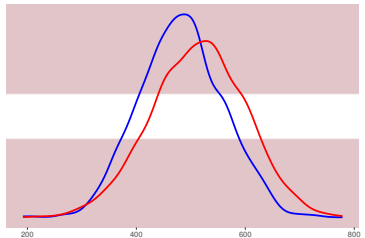
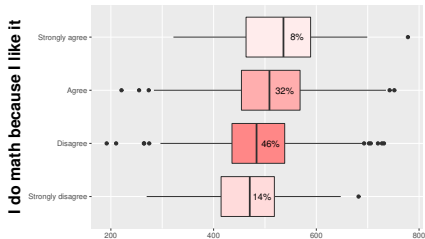


Korea mean score is **5** out of 65 countries

```
aread("LRajkowski/pisa/d4989acc2078e7de45e07936c751e85e")
```

► Table of contests

Latvia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/6c78a2c7907aa08b254b9b5b339e3cd0")
```

Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/6f9e874e3014a8b580f6b07b9ba618a7")
```

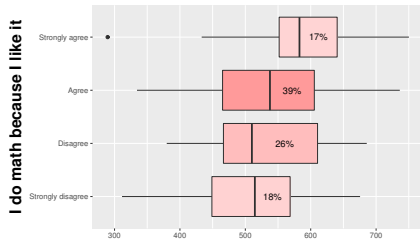


Latvia mean score is 23 out of 65 countries

```
aread("LRajkowski/pisa/cabf1876a66e8775754687ec80a09090")
```

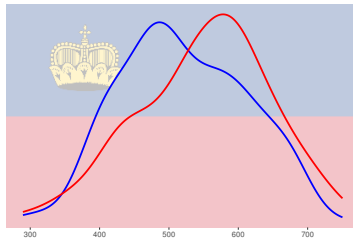
► Table of contests

Liechtenstein



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/4972ae06f5b621f1051f2da532a5bfb7")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/0a5b13838d9fe98253b8e4b1b7cbcaae")
```

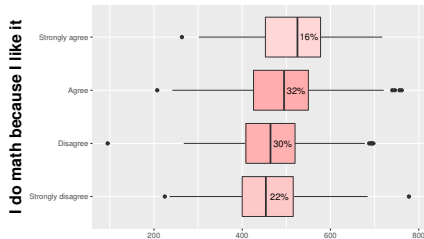


Liechtenstein mean score is **7** out of 65 countries

► Table of contests

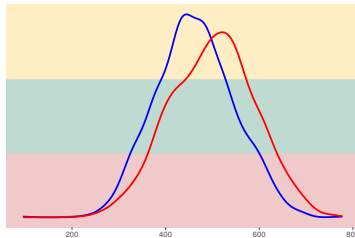
```
aread("LRajkowski/pisa/2dff2a8910b8d143b9a8eca739dcb825")
```

Lithuania



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/654760cda56e41fcd6412cb72c7f27be")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/19bd0bc2da557374508fabd7b8dc292b")
```

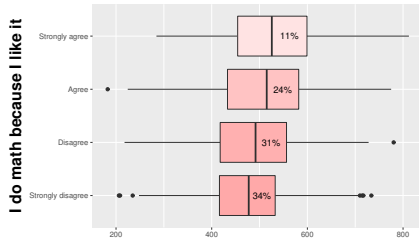


Lithuania mean score is **40** out of 65 countries

► Table of contests

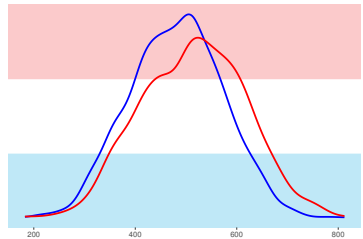
```
aread("LRajkowski/pisa/bd8cd90102519d7846af1f529d0453b1")
```

Luxembourg



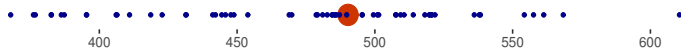
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/02cd14e77420c168343485d8aa5f2df3")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/c899f288d364fb178576f0b279a5b516")
```

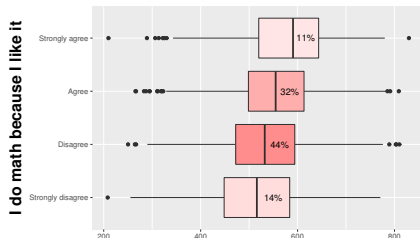


Luxembourg mean score is **28** out of 65 countries

► Table of contests

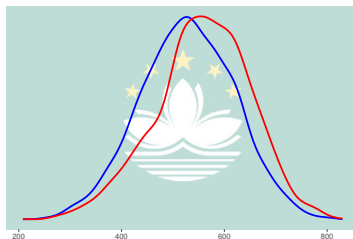
```
aread("LRajkowski/pisa/7dc98ff1ccc0aba9ac7c8554713d4c78")
```

Macao-China



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/f954962930f5fd7334e95eb5592819e4")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/cc1a5c5ef0df0fbac37e55cd16b6af6a")
```

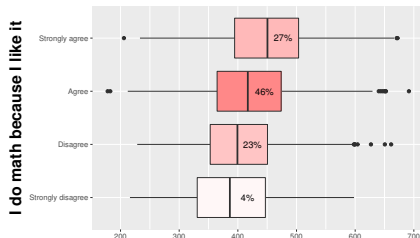


Macao-China mean score is **6** out of 65 countries

► Table of contests

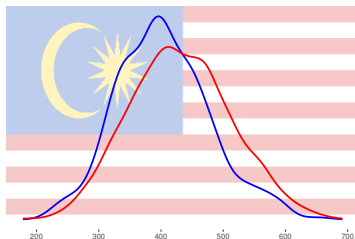
```
aread("LRajkowski/pisa/9ef11cca30676588873a0d9d4915711a")
```

Malaysia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/458ede53c2dac027c16483475b063c74")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/32d4af6ef320814d72f8564176697f0d")
```

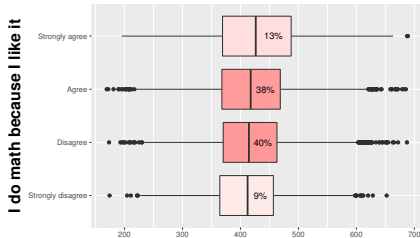


Malaysia mean score is **52** out of 65 countries

► Table of contests

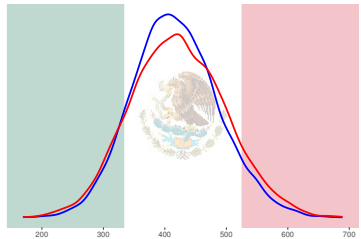
```
aread("LRajkowski/pisa/9cdeb1872198a6f129bf5376ddfaaac5")
```


Mexico



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/f96e925335787474e562dbada527af59")
```



Density estimation of the test score within the groups of **(strong) likers** and **(strong) dislikers**.

```
aread("LRajkowski/pisa/df31fd447e715dcd6c6fd81bd26f8205")
```

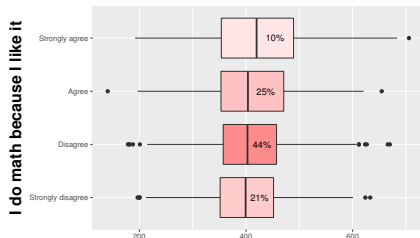


Mexico mean score is **53** out of 65 countries

► Table of contests

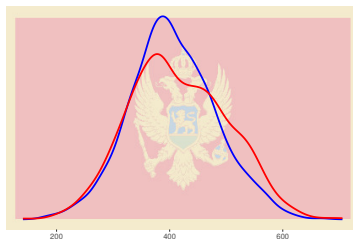
```
aread("LRajkowski/pisa/469ab5fc6b844b09aac790f6a8d50563")
```

Montenegro



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/e8c46a8e1798826826f2c78b8d318bd2")
```



Density estimation of the test score within the groups of **(strong) likers** and **(strong) dislikers**.

```
aread("LRajkowski/pisa/76451053710e69c861b86795f24c74ee")
```

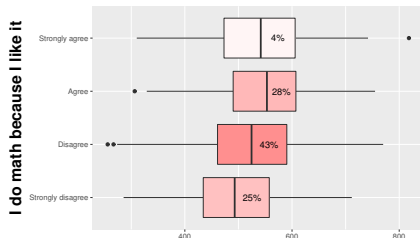


Montenegro mean score is **55** out of 65 countries

```
aread("LRajkowski/pisa/7a46eb6b4454a7d18f0ec0e7fa6a20af")
```

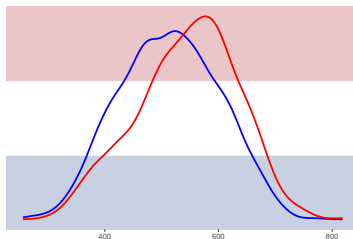
► Table of contests

Netherlands



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/aaaba8b119b5b2cf4d18ff3aa129e6f0")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/3c3a4112b4b1f352f919309ec04d3bba")
```

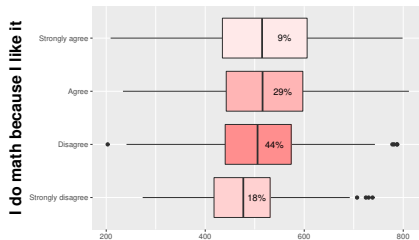


Netherlands mean score is **14** out of 65 countries

► Table of contests

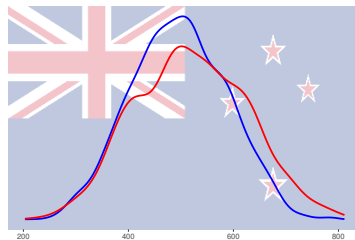
```
aread("LRajkowski/pisa/09a42ed12330d0e96c1cfff3a95ff715")
```

New Zealand



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/6a4bfb10144f91ef251120427151522e")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/a5d87004e24a7153d439ff61059e7aaf")
```

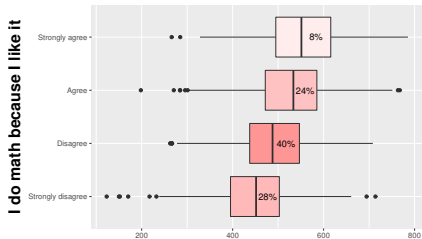


New Zealand mean score is **20** out of 65 countries

► Table of contests

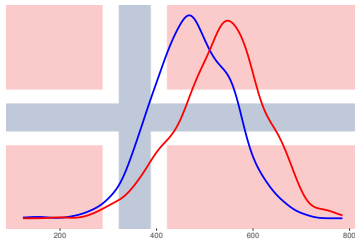
```
aread("LRajkowski/pisa/47cc6d4dfbcde54835d2435edde8ca7")
```

Norway



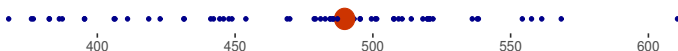
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/27acb351679dce346ec50efe3b56444f")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/fc7eec0f5d699566a45e3ce42b90aa80")
```

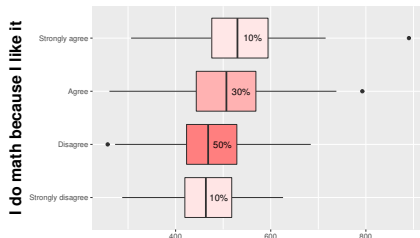


Norway mean score is **29** out of 65 countries

```
aread("LRajkowski/pisa/77404bc85c20ebfa4610811a62248526")
```

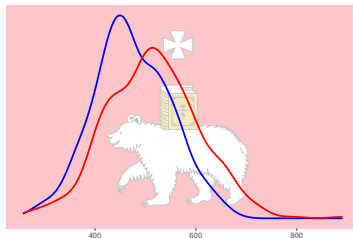
► Table of contests

Perm(Russian Federation)



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/98586e33089f42e4aae1202505ddffdd")
```



Density estimation of the test score within the groups of **(strong) likers** and **(strong) dislikers**.

```
aread("LRajkowski/pisa/9bbf924046340228db88aa650efe919d")
```

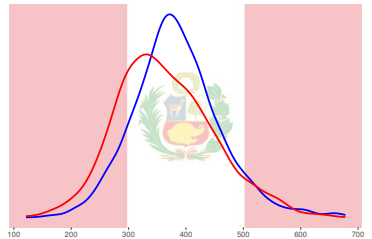
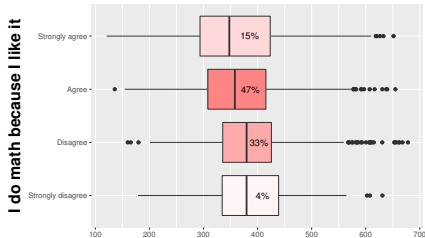


Perm(Russian Federation) mean score is **31** out of 65 countries

► Table of contests

```
aread("LRajkowski/pisa/f88b5ed1ae9884424ce794b070000899")
```

Peru



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/c20fc0cbbc54fe4582feb4eada44eead")
```

Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/05fae3572b7bef60b666026f3dbbe77c")
```

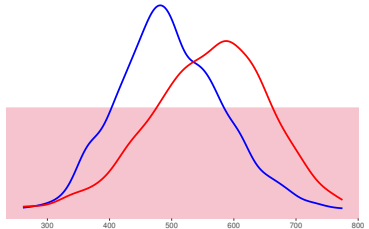
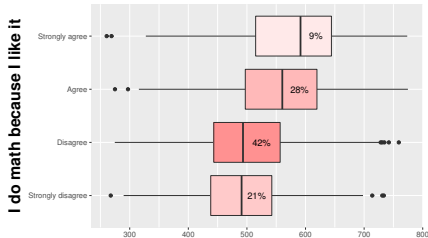


Peru mean score is **65** out of 65 countries

► Table of contests

```
aread("LRajkowski/pisa/2be17a1876ddc2b15d2b4152e86d70d3")
```

Poland



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/b876ee278bc08565a6d2fdf145a86957")
```

Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/ffdf07ae0de10135ff9f37f052031f66")
```

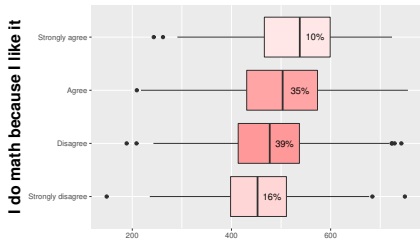


Poland mean score is **11** out of 65 countries

```
aread("LRajkowski/pisa/b748ba017fedef1c63e960b5fa04010d")
```

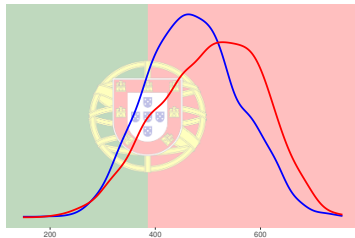
► Table of contests

Portugal



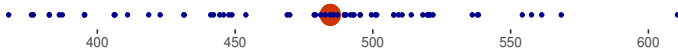
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/6d41f71b1c3ac5636c95470f9348078c")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/cbd1837627910b3495607ba53a6c4e27")
```

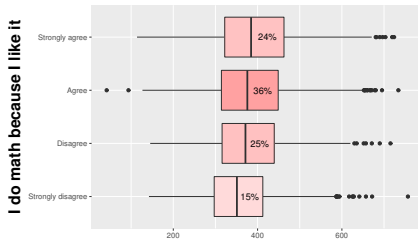


Portugal mean score is **35** out of 65 countries

```
aread("LRajkowski/pisa/525da0dae2717f43e4596684e4d7a5b7")
```

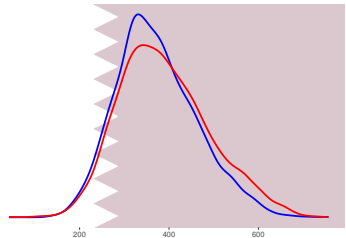
► Table of contests

Qatar



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/2fc96e5d8a518c1346c38509f29c427d")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/a015c356a1a8adde2ada7207f213c021")
```

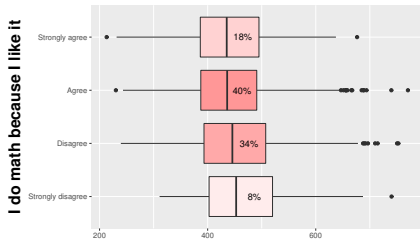


Qatar mean score is **63** out of 65 countries

```
aread("LRajkowski/pisa/a4772791ec4b2218f4ba62103faf481a")
```

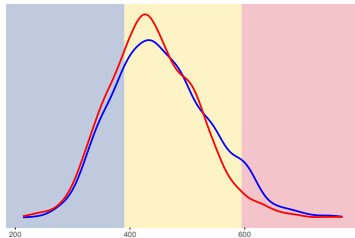
► Table of contests

Romania



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/426effdba417372cfd5d881c02254755")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/72020721bf4d16c59f703b6a426d4ba0")
```

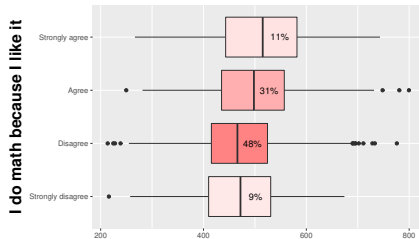


Romania mean score is **46** out of 65 countries

► Table of contests

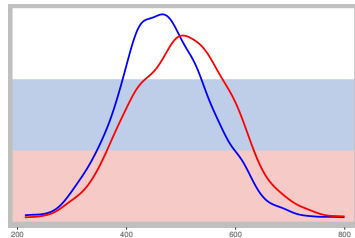
```
aread("LRajkowski/pisa/5c6c605b1c89a4bf2b300711a55ddaba")
```

Russian Federation



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/26490696612aaae7f0b7108171936f9f")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/3cec53be7480eda1884e7854aa39bf1f")
```

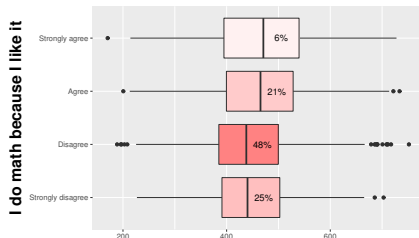


Russian Federation mean score is **37** out of 65 countries

► Table of contests

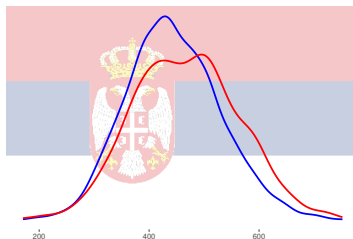
```
aread("LRajkowski/pisa/63e09363d8eb4a90586172d7fe986258")
```

Serbia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/9b141a6a3d7c04b13d42879cf1382188")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/5533633a48db601294cd56005852b95a")
```

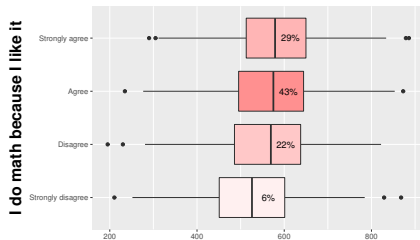


Serbia mean score is **45** out of 65 countries

► Table of contests

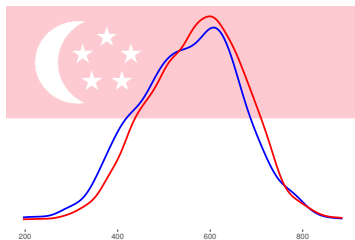
```
aread("LRajkowski/pisa/d866679fe7d9e534e7be7c2ff4eabb9d")
```

Singapore



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/f054e5d0e17df6c2d8970ec30f0fd8a8")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/63492ef9595e564bf0799153f1ba12e5")
```

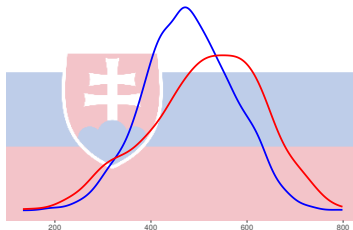
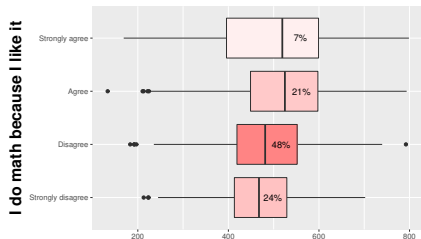


Singapore mean score is **2** out of 65 countries

► Table of contests

```
aread("LRajkowski/pisa/b506ffcb24b44740ccb9a56d54b72c00")
```

Slovak Republic



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/5a386d039526ad9953c51e90aefc7f7a")
```

Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/2897d0c7b2bae2f026e40f5d880b5ef5")
```

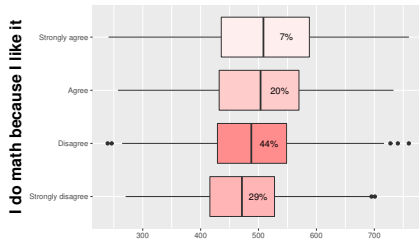


Slovak Republic mean score is **33** out of 65 countries

► Table of contests

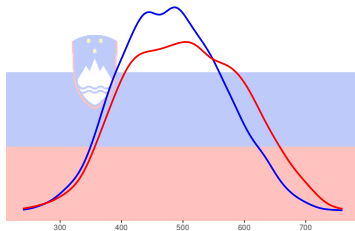
```
aread("LRajkowski/pisa/4610563afa597fc723f23df21dc03045")
```

Slovenia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/38cd8b50fde02ed774f7722b3f3d2a5d")
```



Density estimation of the test score within the groups of **(strong) likers** and **(strong) dislikers**.

```
aread("LRajkowski/pisa/feeb88757256be0c7fb757abb22d70e6")
```

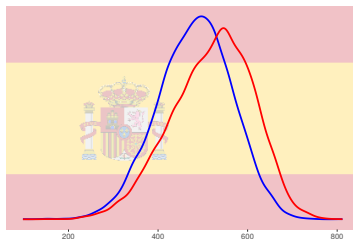
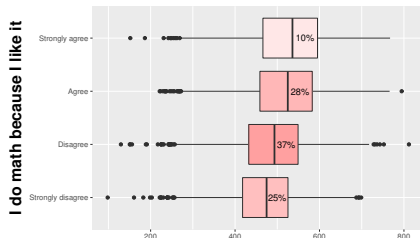


Slovenia mean score is **36** out of 65 countries

► Table of contests

```
aread("LRajkowski/pisa/624968fe8b5fe59a882bd9f55543a103")
```


Spain

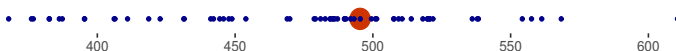


Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/4b65476baf133a0a8cf4e0f21e9c7ba0")
```

Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/341ae874c2335b3c5ebe92e0e52e5ecf")
```

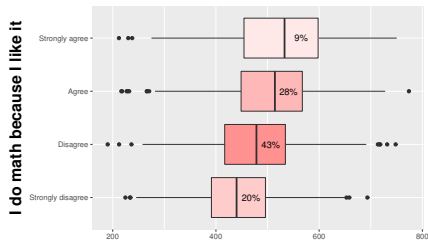


Spain mean score is **24** out of 65 countries

```
aread("LRajkowski/pisa/ec6b3a542a016b079b0957d8a2d3f7c0")
```

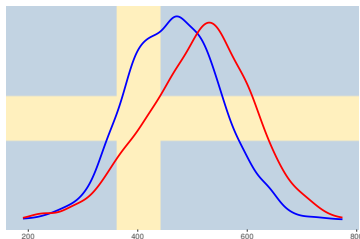
► Table of contests

Sweden



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/90c24a087ac3ba78e6ef0b381d40c171")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/3dc90438703327f9eea7f1fa71849bc8")
```

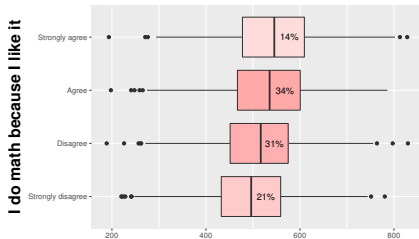


Sweden mean score is **39** out of 65 countries

```
aread("LRajkowski/pisa/7aa6825112abb9cff8ca58cf3ae66653")
```

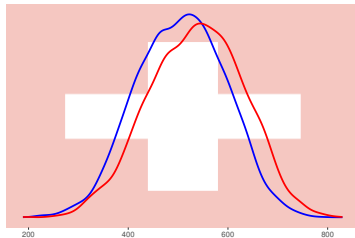
► Table of contests

Switzerland



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/a6d42b2b9c01d3ba3ab57b69fa662eb7")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/5301b496caa94bcbcfb58e1699324e88")
```

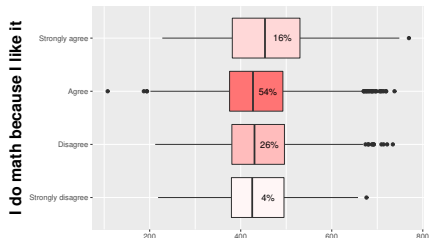


Switzerland mean score is **10** out of 65 countries

```
aread("LRajkowski/pisa/8ab2a5200bcbded869c1cfc5bfc4cc4")
```

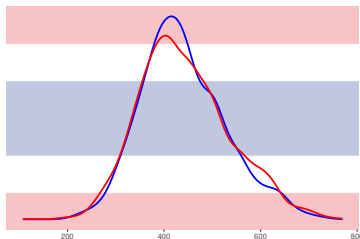
► Table of contests

Thailand



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/5c68a2491b8463f01f0a9de1583806dd")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/44014d02a837559439ac2b1339db3635")
```

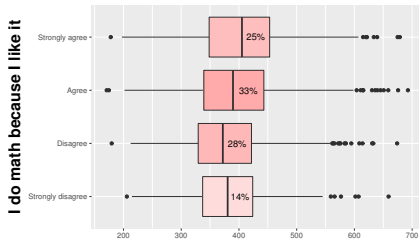


Thailand mean score is **49** out of 65 countries

► Table of contests

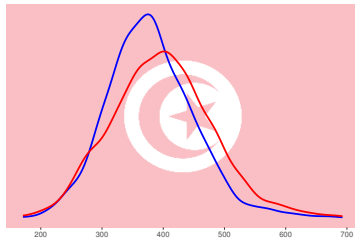
```
aread("LRajkowski/pisa/e4e44d8bd479b5f905563b702a87cd2f")
```

Tunisia



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/1fe3386929622c3ceee821dd4d60c0d7")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/ae787c62414079c226e03f3b59152e51")
```

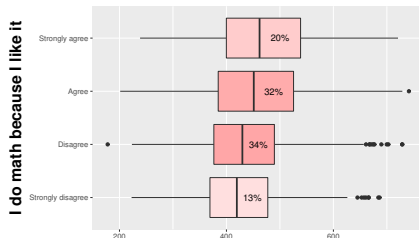


Tunisia mean score is **59** out of 65 countries

```
aread("LRajkowski/pisa/591b8793bb0b9d34d589e7e23dbb00f1")
```

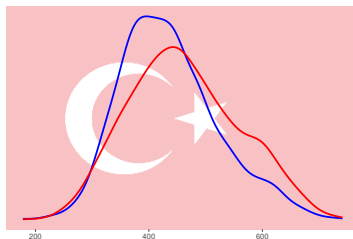
► Table of contests

Turkey



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/4715a956f5e1b2abaffb537dbef6a3b6")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/8dd782dfd1d6191f5feba9e7c37b7c570")
```

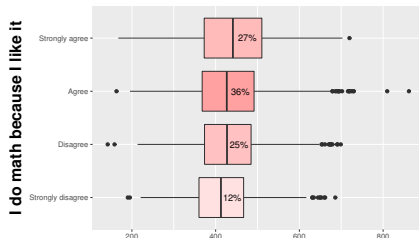


Turkey mean score is **44** out of 65 countries

```
aread("LRajkowski/pisa/9aa860670e9756602fcc4dfe82ea1cd9")
```

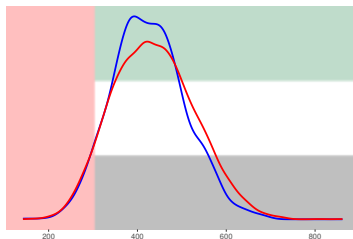
► Table of contests

United Arab Emirates



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/6467ef517952716a01fc2a96395ade7c")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/f4501c8a4acf1d264be0ff545c000c6d")
```

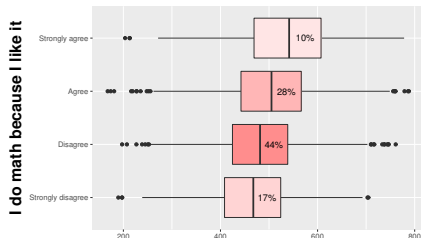


United Arab Emirates mean score is **51** out of 65 countries

► Table of contests

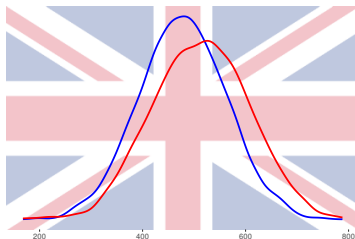
```
aread("LRajkowski/pisa/cdd485b98b94eaab1d07df245da87724")
```

United Kingdom



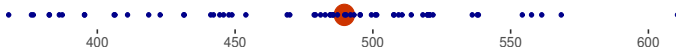
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/cbbe75b5050591de788e2899ee61c0b")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/d3075675bfad4673b4f82f56add3f4c5")
```

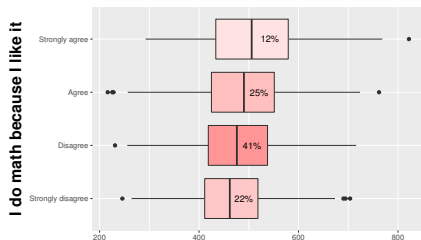


United Kingdom mean score is **30** out of 65 countries

► Table of contests

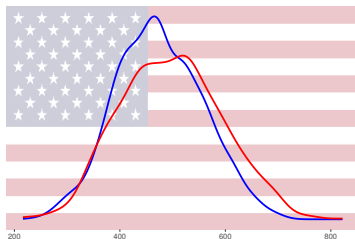
```
aread("LRajkowski/pisa/b41e8fb16ea3e4f2bea8d38dba18803e")
```


United States of America



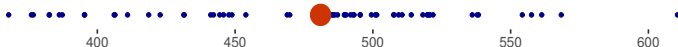
Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/8806e90600fd20cd13941d58fbbd307d")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/2301ff33f2c3b2058effbe3ea9f90b40")
```

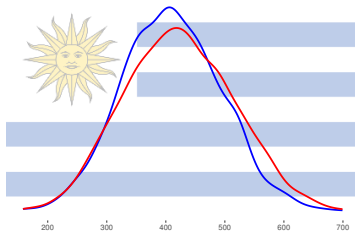
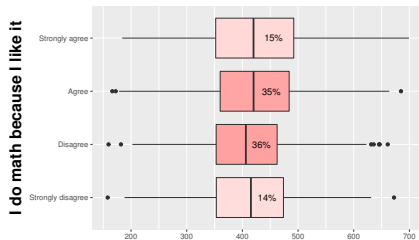


United States of America mean score is **38** out of 65 countries

► Table of contests

```
aread("LRajkowski/pisa/c5647e6ecea1a7f3ce0850436bc9f20e")
```

Uruguay



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/d3334f37ea311b2b7844f80eeab7c238")
```

Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/be1e57391a139e667911138f36eca189")
```

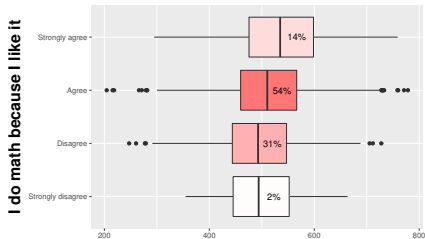


Uruguay mean score is **54** out of 65 countries

```
aread("LRajkowski/pisa/182fabeddb6ec96dbb1f655ec0d31c0e")
```

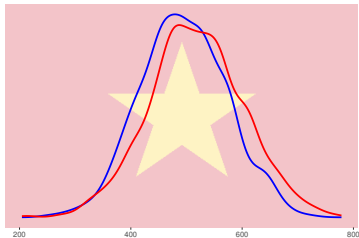
► Table of contests

Vietnam



Boxplots of the test score. The number on the box is the percentage of students within the group. It is also indicated by the fill.

```
aread("LRajkowski/pisa/28b3cfcc74df9ec10349a6ef3d2c4356")
```



Density estimation of the test score within the groups of (strong) likers and (strong) dislikers.

```
aread("LRajkowski/pisa/4923e3a66e54991cc65167be1eac5dd7")
```



Vietnam mean score is **16** out of 65 countries

► Table of contests

```
aread("LRajkowski/pisa/2c2316e20eeab958717b3b02ca229429")
```