

Biathlon World Cup data analysis

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So what exactly is biathlon, anyway?

Biathlon is a winter sport that combines cross-country skiing and rifle shooting. The sport has its origins in an exercise for Norwegian soldiers. The first known biathlon competition took place in 1767 when border patrol companies competed against each other. Gradually the sport became more common throughout Scandinavia as an alternative training for the military.

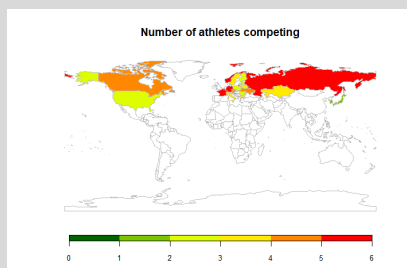
In this project I analysed the results of Biathlon World Cup men 20 km Individual competition. The competition was held in 1. December 2016 at OesterSund, Sweden. The 20 km individual race (15 km for women) is the oldest biathlon event. The biathlete shoots four times at any shooting lane, in the order of prone, standing, prone, standing, totalling 20 targets. For each missed target a fixed penalty time (one minute), is added to the skiing time of the biathlete.

Who won the competition?

This time the completion turned out to be really tough. Here are the champions:



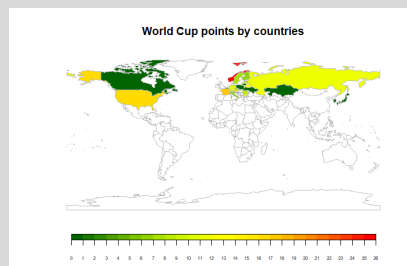
Here we can see that the best athletes are from France, Norway and Bulgaria. In total there was 103 athletes from 27 countries and each country can present one team with 1-6 members.



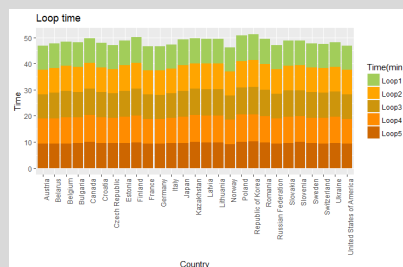
This largest teams with 6 members are: France, Germany, Norway and Russian Federation. Smallest with only one member are Belgium and Croatia. We can see that Estonia has 3 members- not the best but could be worse.

What were the results?

Here you can see the World Cup point score after first competition. The best score with 25.7 has Norway. The second and third place are hold by France and USA with 17.8 and 17 accordingly.



After the first competition Estonia has 6.7 points which is not that bad. We are on the 12th place out of 27 although we could do better. This season we have exactly 8 more World Cups to come. So let's find out exactly how! First maybe it has something to do with our skiing?

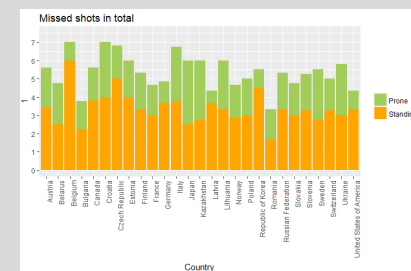


Turns out that we are not the best or the worst- we are somewhere in the middle. Some improvement is necessary.

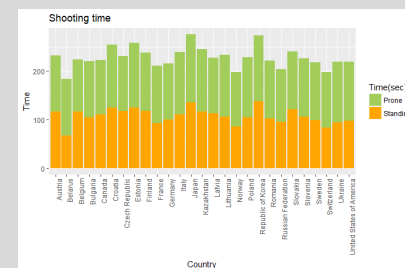
- Loop 1: 9.48 (mean: 9.4)
- Loop 2: 10.24 (mean: 9.54)
- Loop 3: 10.44 (mean 10.13)
- Loop 4: 10.12 (mean 10.24)
- Loop 5: 9.49 (mean 9.57)

The fastest skiers overall are the Norwegian. But everybody knows that Norwegians are born with skis on their feet- so let's not give up. Maybe we have talent in shooting?

The best country in prone shooting is Latvia with 0.67, followed by Belgium. Korea and USA with 1. That's a surprise. The worst is Japan with 3.5. Estonians miss 2 shots averagely. Best in standing shootings is Romania with 1.67. Turns out that Belgians are among the best in prone shooting but the worst in standing. Average number of missed shots is 6 out of 10! Here we must remember that Belgium team has only one member- so let's not make any conclusions about Belgians. Our sample is too small.



If you are interested here you can observe shooting times. Can you notice a pattern?



We see that Estonians are rather average because they don't stand out neither in skiing or shooting. Overall with a hard work anything is possible.

Reference

https://ibb.blob.core.windows.net/docs/1617/BT/SWRL/CP01/SMIN/BT_C73A_1.0.pdf
<https://github.com/annalanevali/dataminingProject.git>

