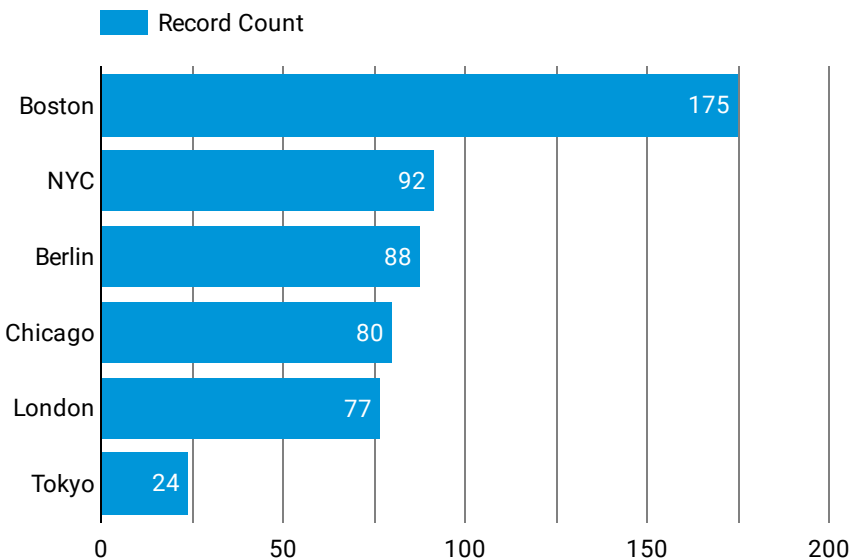


# Marathon Majors Winners

A marathon race consist of running a distance of 42 kilometres, which has an ancient Greek story, of a messenger who raced from the site of marathon to Athens, with the news of an important Greek victory over an invading Persian army. To commemorate his dramatic run, they created an Olympic event which consist in running this distance. The number of enthusiastic and professionals increased which provoke that a company came up with a unique and prestige competition. Which consist in running a marathon around the world being in the most unique and powerful cities in the world. This select list is composed only of 6 cities, which consist of Tokyo, Boston, New York, Chicago, London and Berlin.

So lets finds out who dominates the athletic world and why? The following dataset evaluates the different winners, for every major race, with their respective time and the country which they belong.



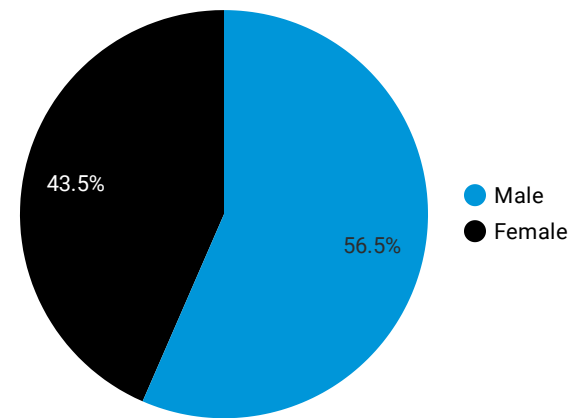
As we can see USA holds the most number of marathons with Boston and New York being the leading ones.

However looking at the world map of winners, we could suggest that USA does not produce much of marathon winners.

Europe, where one third of the races take part, does create a lot of marathon winners.



# Gender Results



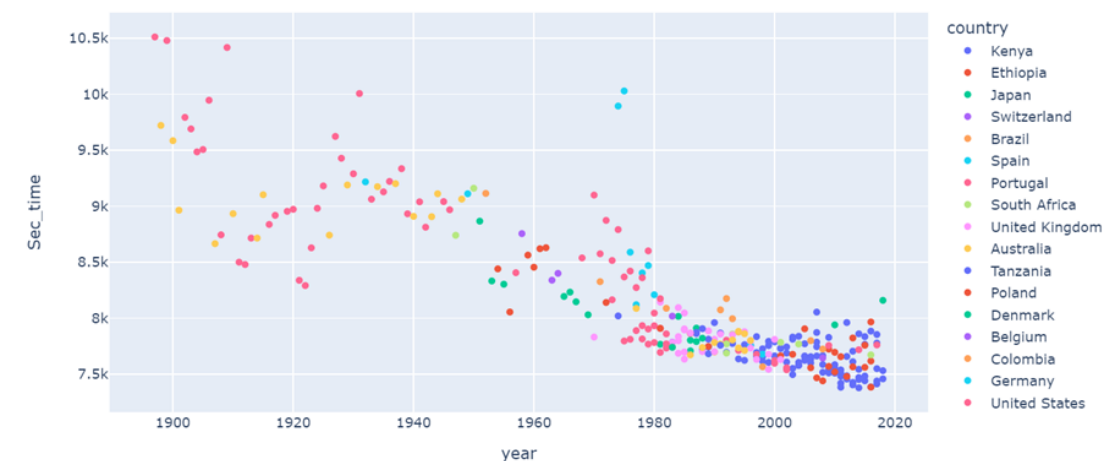
As each race has one female and one male winner, you should expect that the distribution should naturally be 50/50 form men and women.

So the doubts does come to head, why is not the distribution even??

So digging into the history, I came across that up until 1966 only men were allowed to run and compete in marathons. The only way a women were allowed was by disguising themselves and pretending to be men.

Also as a fun fact in the year 2014 two women were register as winners, so in that race there was a human error.

Men's Record Progression : Time v/s Year



The two graphs from the left shows the progression of time taken from the marathon winners to complete the race throughout the years and generations. I have divide it by gender as they have a male and a female winner for each race.

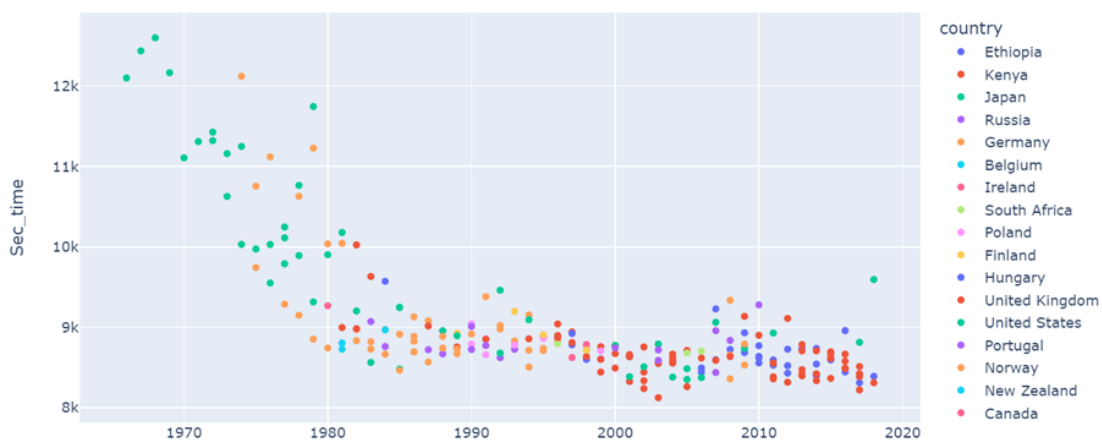
As we can clearly see, the amount of time required by the winner to complete the marathon have been brought lower and lower through the combine effort of many world-class athletes.

This positive progression could be the result of the improvement in technology, which could consist in the foot ware as the brands are implementing a carbon sole plate, which does help the runner to push themselves forward and reduce the impact on the kneecaps; Also the evolution of the sports watches does help in the training and to calibrate better your efforts.

A better health management and analysis to help runners reach peak human performance, along with more prepare and sophisticated coaches, which does not only look at doing splits or long distance runs. But does also work in the strength and in the mental and emotional part of the runner.

Note: This graphs had been done in python

Women's Record Progression : Time v/s Year



# Winners

winner

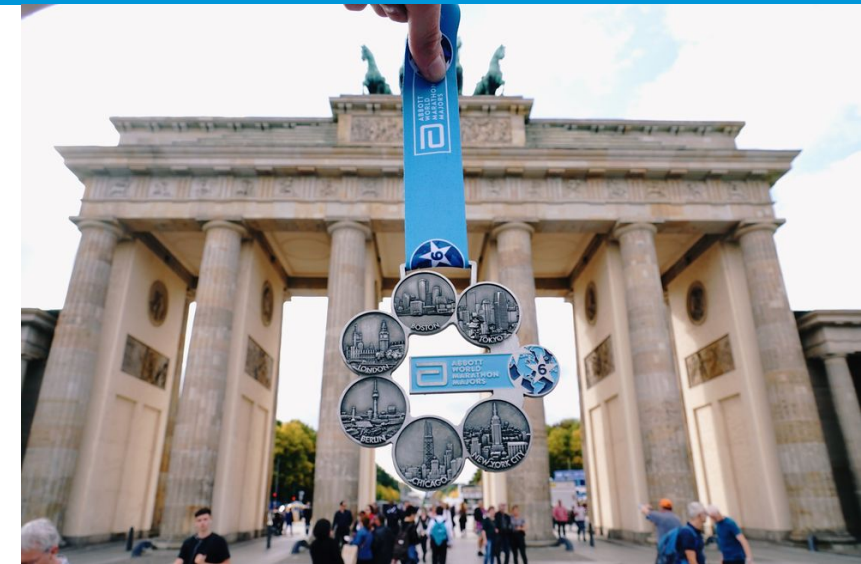
315

Record Count

536

There has been a total of 315 distinct race winners since the World Marathon Majors was created.

There has been a total of 536 races, which means that nearly 60% of the race winners had the chance to win again one of the big 6



Since 2006 when the idea of the marathon major was introduced and founded, there have been many winners which also had the opportunity to win various times the same race or different races inside this organisation.

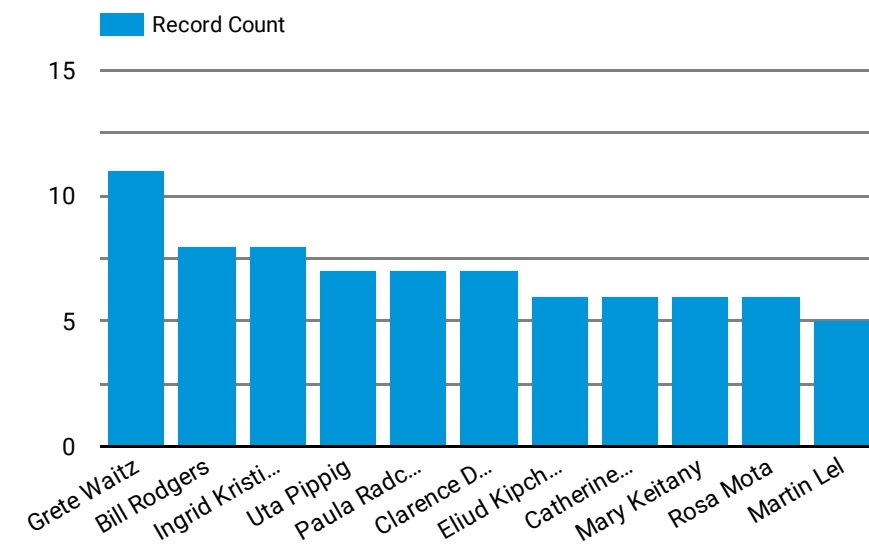
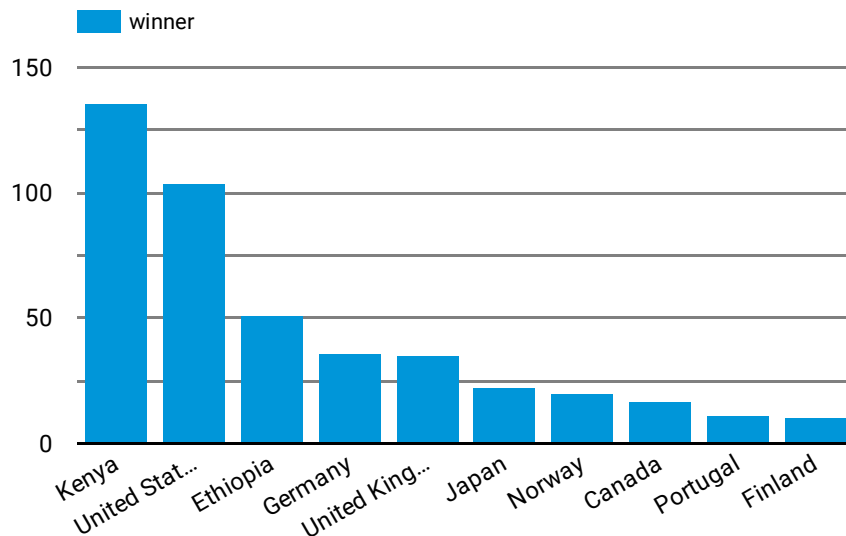
This is why I have plotted two different graphs, 1) race wins against country and 2) race wins against racers

1) In this graph the information counts how many times a runner from that country has won a race or various races. It does include both genders men and female.

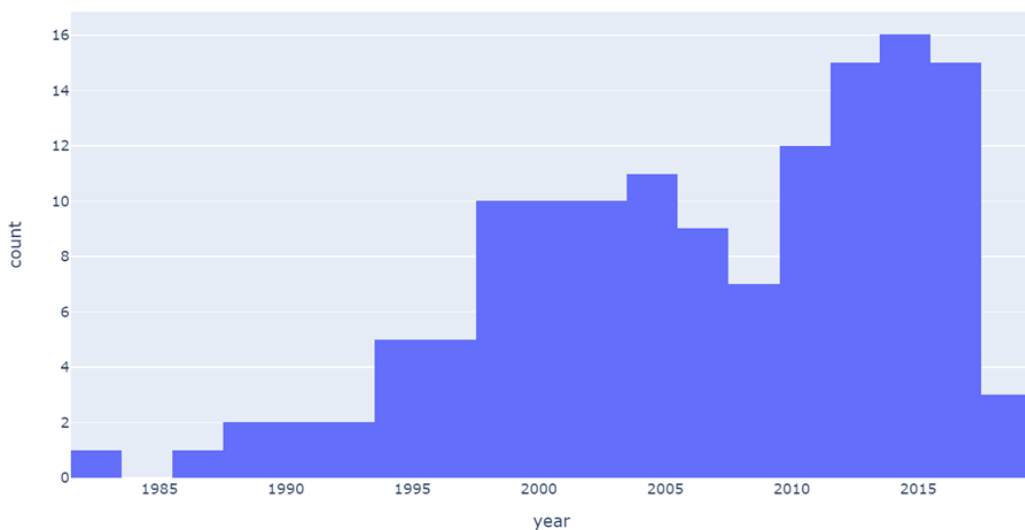
As we can see Kenya is the country with the most race wins (136) in both categories along with the United States with 104. However, these are a sample of countries with the most wins, which contains at least two digits. In the next slide I would explain why Kenya, a small poor country in Africa, is so elite in long and medium distance runs.

2) In this graph we look at the actual race winners with the amount of trophies won in their closet. As you can clearly see the runner with the most race wins is Grete Waitz with 11 race wins. She ran in the female category representing Norway and won the races of New York and London only, winning the New York marathon 9 times which consist of 82% of her record.

In the male category we have the second runner with the most race wins being 8. This is Bill Rodgers. These race wins were in Boston and New York, the wins were 4 times in each race.



# Why Kenya...



Note: This graph had been done in python



This was the question that baffled me the most. Why does this small country of 47.6 million produce the highest number of marathon winners in the world. Not only they are the best long distance runners in the major 6, however we need to add one race more as he recently won the Tokyo marathon. Also Eliud Kipchoge, the star of the marathons and the hero of Kenya with 6 race wins in the marathon majors. In addition he was able to broke the sub2hr marathon barrier in its second attempt in Vienna (Austria), October 12 of 2019 . Achieving an historical time of 1 hour 59 minutes 40 seconds

After researching for I while I found various articles which have a common trend and views on why the Kenyans are so good in long and middle distance races. Several factors have been proposed to explain the extraordinary success of the Kenyan runners, including:

Some of these factors have been examined objectively in the laboratory and field, whereas others have been evaluated from an observational perspective.

## Conclusion

The sport of running has gain a lot of popularity over time, specially during the periods where the economic situation of the average household wasn't favorable due to the lack of initial investment. The result of this increase in popularity had the result of the creation of several races of long distance (marathons) which the union of them resulted in the creation of the Major Marathon Competition. Which involves all kind of runners amateur and professionals. However, it make sense that the winners of this competitions are the actual professionals.

During the years there has been many winners from different nationalities, but we cannot discuss that the country which supplies the most marathons winners is Kenya, giving 136 winners with their start and world record holder Eliud Kipchoge.

- (1) Genetic predisposition.
- (2) Development of a high maximal oxygen uptake as a result of extensive walking and running at an early age.
- (3) Relatively high hemoglobin and hematocrit.
- (4) Development of good metabolic "economy/efficiency" based on somatotype and lower limb characteristics.
- (5) Favorable skeletal-muscle-fiber composition and oxidative enzyme profile
- (6) Traditional Kenyan diet.
- (7) Living and training at altitude.
- (8) Motivation to achieve economic success.