



WHAT LIES BEHIND THE SUCCESS OF THE FASTEST LONG-DISTANCE RUNNERS IN THE WORLD

VANIA ALVAREZ MURAKAMI

DS2001

WHAT ARE YOU GOING TO LEARN TODAY?

1. IDENTIFY PROBLEM

2. DATA SET

3. METHODS

4. RESULTS





WHAT IS SO SPECIAL ABOUT RUNNING?



"I'LL BE HAPPY IF
RUNNING AND I CAN
GROW OLD TOGETHER."

— HARUKI MURAKAMI



PROBLEM STATEMENT/DRIVING QUESTION

WHAT IF THERE IS **MORE TO WINNING** MARATHONS THAN A RUNNER'S TRAINING LEVEL? WHAT IF THE DETERMINANT OF WHO WINS A RACE COMES DOWN TO **LUCK**?

RESEARCH



THE DATASET

✕ BOSTON MARATHON
(2016-2019)

✕ NYC MARATHON (2017-2019)

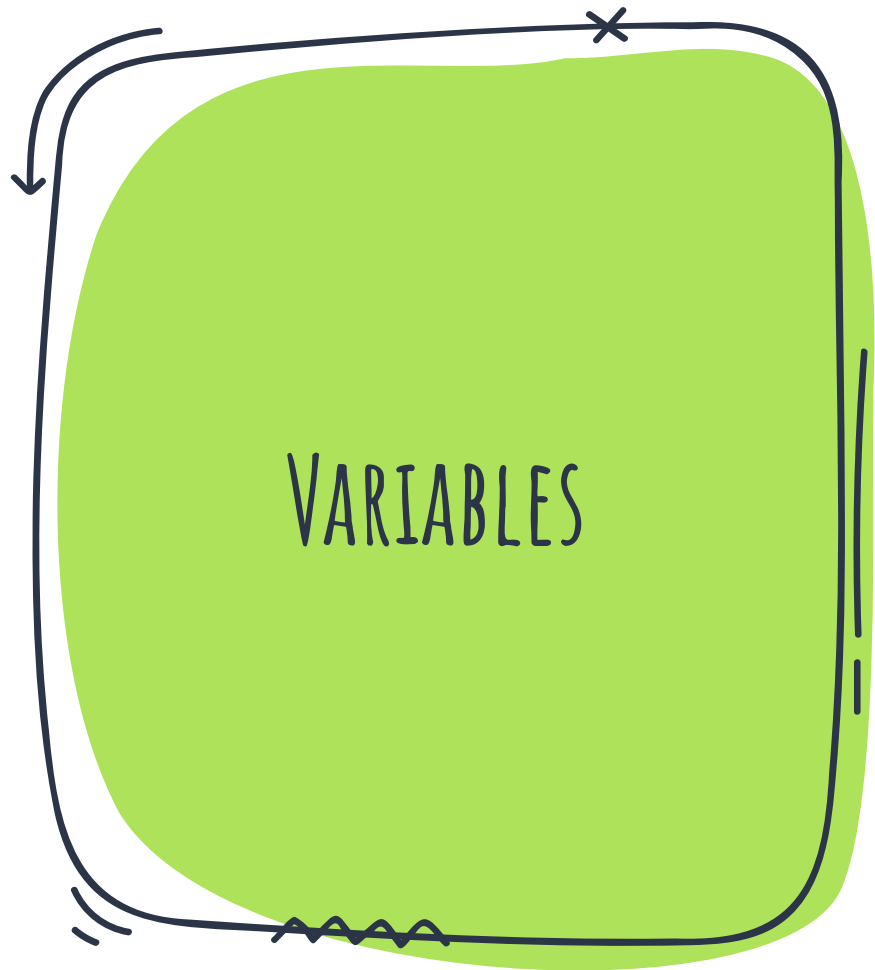
✕ BERLIN MARATHON (2017-2019)

✕ LONDON MARATHON
(2019-2020)

✕ AMSTERDAM MARATHON
(2018-2019)

✕ CHICAGO MARATHON
(2018-2019)

✕ THE PAST SIX OLYMPIC
MARATHONS (1996-2016)



- X RANKING
- X TOTAL RUN-TIME
- X HEIGHT
- X WEIGHT
- X DATE OF BIRTH
- X COUNTRY OF BIRTH
- X NATIONALITY



ALGORITHMS AND DATA CLEANING

CLEANING THE DATA

- X SPLIT!
- X OBJECT, FLOAT OR INTEGER?
- X DROP METHOD



ALGORITHMS!



CONVERTING DATA

- ✗ CALCULATING PACE
- ✗ METRIC VS IMPERIAL SYSTEMS

CREATING SUBGROUPS

- ✗ TOP 1, TOP 3, TOP 10

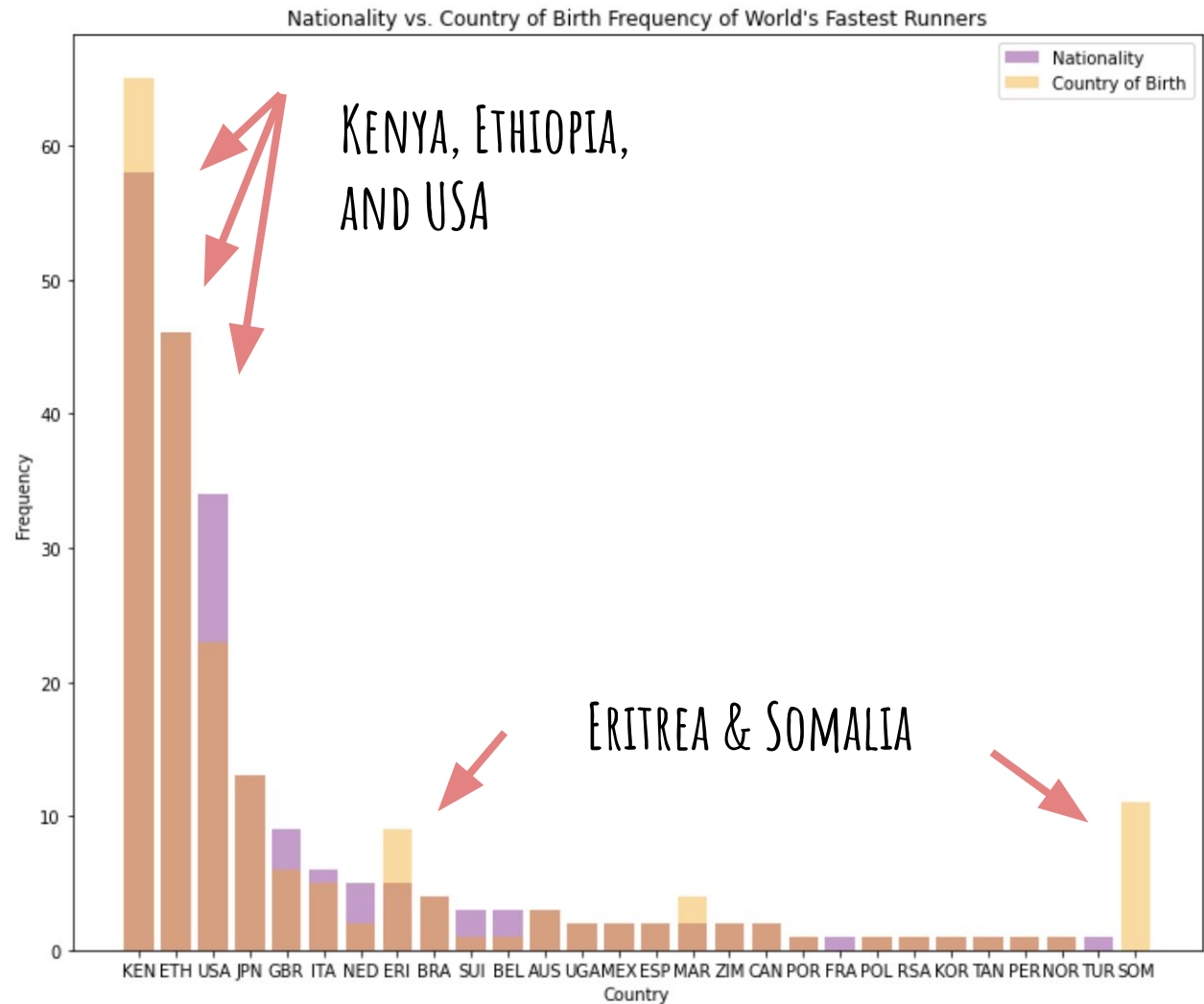
STATISTICS

- ✗ AVERAGES

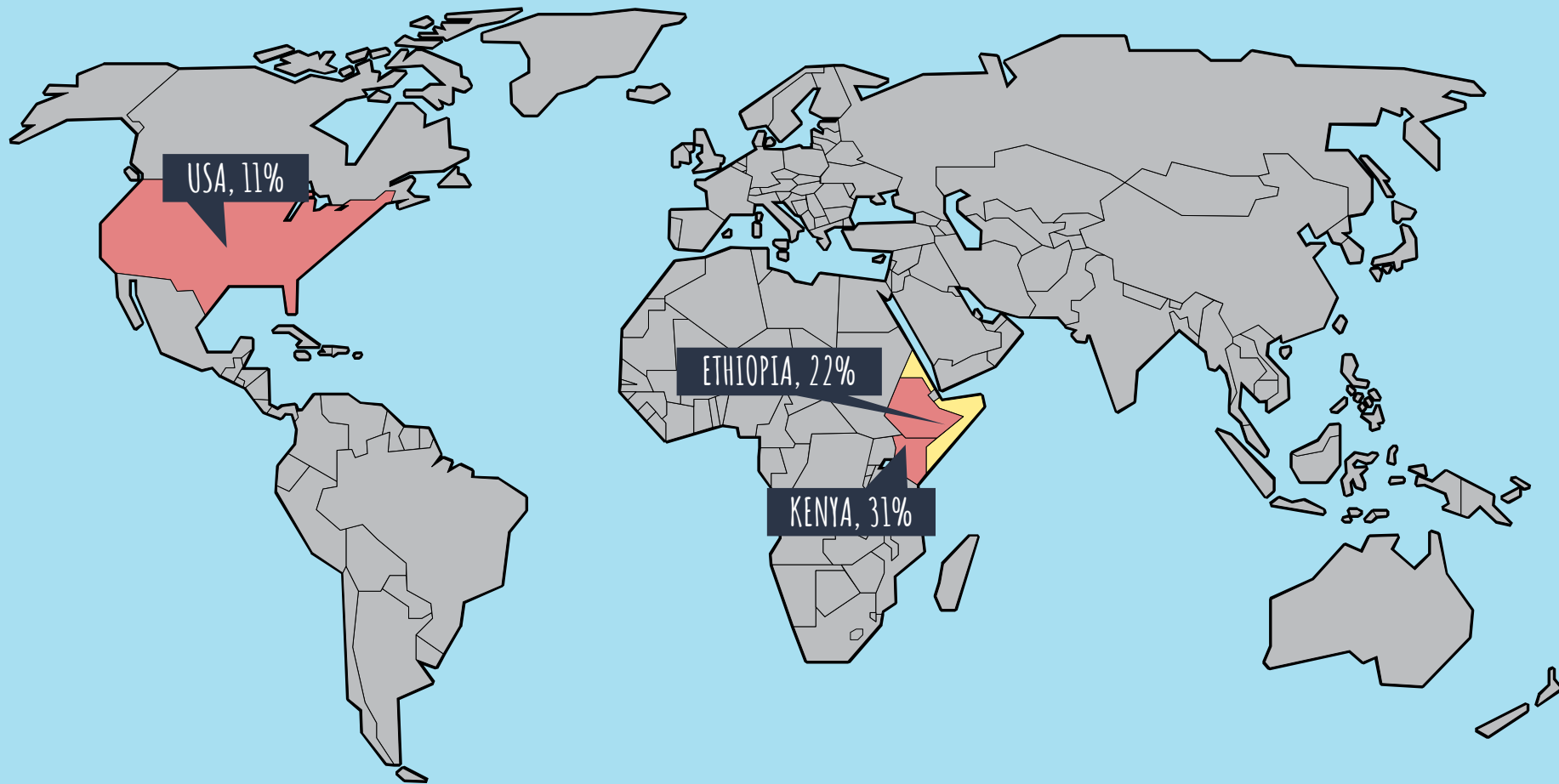
REDEFINING SUCCESS



NATIONALITY VS. COUNTRY OF BIRTH



WHERE DO THESE RUNNERS COME FROM?



THE GENETIC LOTTERY FOR LONG DISTANCE RUNNING

168.67 CM (OR 66.41 IN)

The Ultimate Height

54.74 KG (OR 120.71 LBS)

The Ideal Weight

28.54

The Perfect Age

STATISTICAL TRENDS

	<u>1ST PLACE RUNNERS</u>	<u>TOP 3 RUNNERS</u>	<u>TOP 10 RUNNERS</u>
AVERAGE HEIGHT	168.67 CM (OR 66.41 IN)	171.0 CM (OR 67.32 IN)	172.84 CM (OR 68.05 IN)
AVERAGE WEIGHT	54.74 KG (OR 120.71 LBS)	56.57 KG (OR 124.74 LBS)	57.56 KG (OR 126.92 LBS)
AVERAGE AGE	28.54	28.36	29.69

BIRTH DATES



YEARS



MONTHS

EVEN VS ODD

EVEN: 57.43 %

ODD: 42.57 %

<u>MONTH</u>	<u>FREQUENCY</u>
JAN	24
FEB	27
MAR	19
APR	13
MAY	15
JUN	12

JUL	6
AUG	16
SEP	20
OCT	14
NOV	22
DEC	14

IMPORTANT TAKEAWAYS





ANY QUESTIONS?

REFERENCES

- X Presentation template by [SlidesCarnival](#)
- X Typographies: Amatic SC & Nunito
- X Icons: <https://fontawesome.com/>
- X Boston Athletic Association, Connelly Partners. (2020). BAA - Past Results. Retrieved November 29, 2020, from <https://www.baa.org/races/boston-marathon/results/search-results>
- X International Olympic Committee. (2020, November 27). Olympics | Olympic Games, Medals, Results, News | IOC. Retrieved November 29, 2020, from <https://www.olympic.org/>
- X Le Champion. (2020, October 21). TCS Amsterdam Marathon Results. Retrieved November 29, 2020, from <https://www.tcsamsterdammarathon.nl/en/participants/results/>
- X London Marathon Events. (2020). Virgin Money London Marathon Results. Retrieved November 29, 2020, from <https://www.virginmoneylondonmarathon.com/>
- X New York Road Runners. (2020). New York Road Runners Official Race Results. Retrieved November 29, 2020, from <https://results.nyrr.org/races>
- X BMW Berlin Marathon. (2020, February 07). BMW Berlin Marathon Results Archive. Retrieved November 29, 2020, from <https://www.bmw-berlin-marathon.com/en/impressions/statistics-and-history/results-archive/>
- X The World Bank. (2020). GDP per capita (current US\$). Retrieved November 29, 2020, from <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>
- X USA Track & Field. (2020). USA Track & Field - About. Retrieved November 29, 2020, from <https://www.usatf.org/about>

