TELL ME WHERE YOU LIVE AND I WILL TELL YOUR P@SSW0RD:

UNDERSTANDING THE MACROSOCIAL FACTORS INFLUENCING PASSWORD'S STRENGTH

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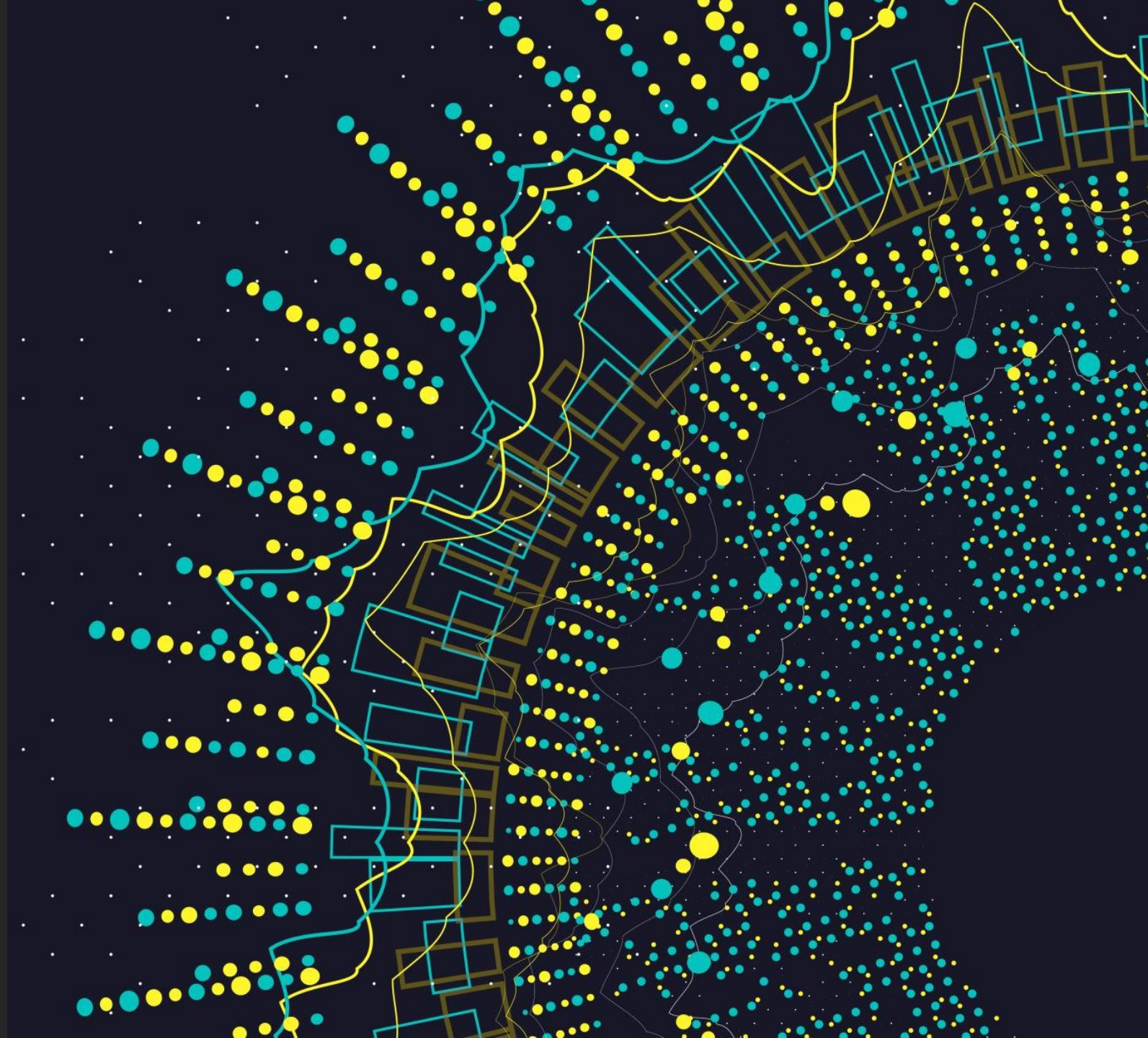
GoSecure™



Ben White 
@morningmoneyben

Your password must be between 732 and 942 characters. It cannot be the same as any word in any known language. It must include 3 hieroglyphs, ancient Babylonian text and the solution to Fermat's last theorem.

- 200 most common passwords by country
  - 4 TB of databreaches across the world
  - 49 countries

DESCRIPTION OF DATA FROM THE LIST

- **Between 169,656 and 146,837,497 users per country**

  (number of people with the same 200 passwords)

DESCRIPTION OF DATA FROM THE LIST

Mean = 2082684 secs
Mode = 0 secs
Median = 2 secs

- **The average time to crack passwords is 2,082,684 seconds**

  (range from 0 to 3,214,080,000 seconds)

  - Majority of passwords from the list can be cracked in less than a minute (61%)

2,082,684 seconds = 34,711 minutes = 578.52 hours **= 24 days**

WHICH COUNTRIES ARE THE BEST AND THE WORST ?

- Based on:
  - Mean time to crack in seconds
  - Maximum time to crack in the list
  - Number of users in the list (number of person sharing the same 200 passwords)
  - % of passwords cracked in less than a minute

BEST

- Portugal
- Brazil
- Canada*
- Chile
- Estonia
- Finland*
- India*
- Indonesia
- Lithuania
- Spain*
- Turkey
- Vietnam*

* = Also appears in the top 10 worst for one criteria

WORST

- United Arab Emirates
- South Korea
- United Kingdom
- United States*
- Hungary
- Ireland*
- Norway*
- Russia
- South Africa*
- Sweden

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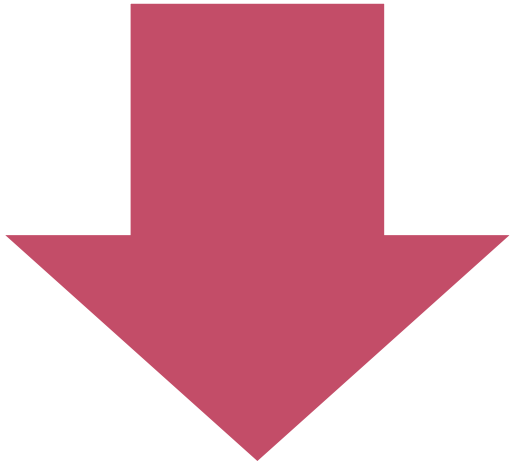
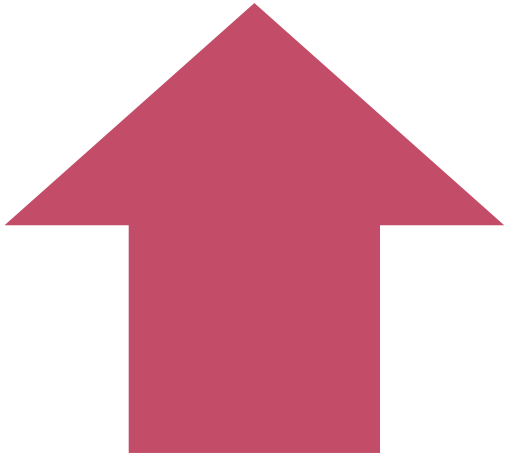
WHAT ARE THE COUNTRIES' CHARACTERISTICS THAT CAN EXPLAIN THESE PERFORMANCE RESULTS?

Independent variables:

Several macrosocial variables characterizing countries





Dependant variable:

Cracking time from the 200 most common passwords by country

LIST OF MACROSOCIAL VARIABLES

- National Cybersecurity Index
- Global Cybersecurity Index (2020)
- Basel AML index (2020)
- Cybersecurity Exposure Index (2020)
- Cyber Legislation Rating
- Cyber-safety Score
- GDP per capita (2020)
- Data Breaches (2021)
- Internet Users (2020)
- IQ (2022)
- Literacy (2022)
- Education (2022)
- Rule of law (2020)
- Digital skills (2019)
- Number of secured servers (2020)
- Mobile cellular subscription (2019)
- Voice and accountability (2020)
- Political stability (2020)
- Government effectiveness (2020)
- Female participation in workforce (2019)
- Freedom of press (2019)
- Digital Adoption Index (2016)
- DAI Business Sub-index (2016)
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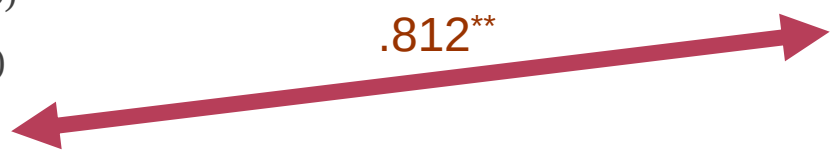

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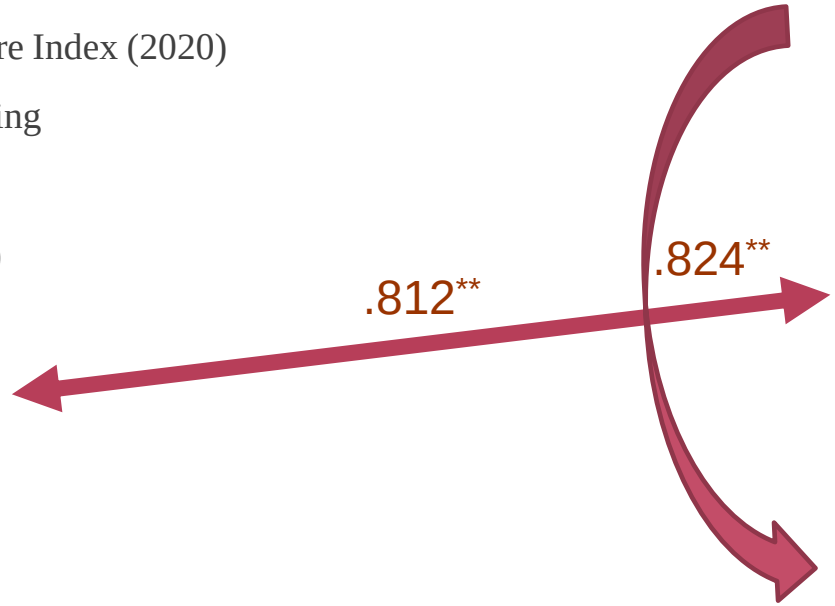

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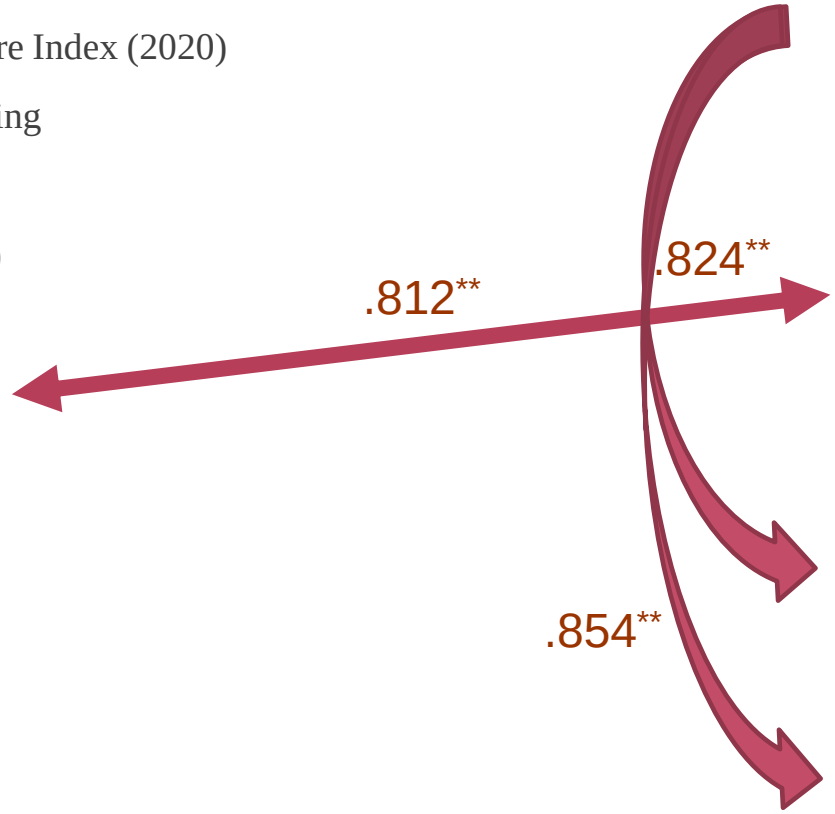

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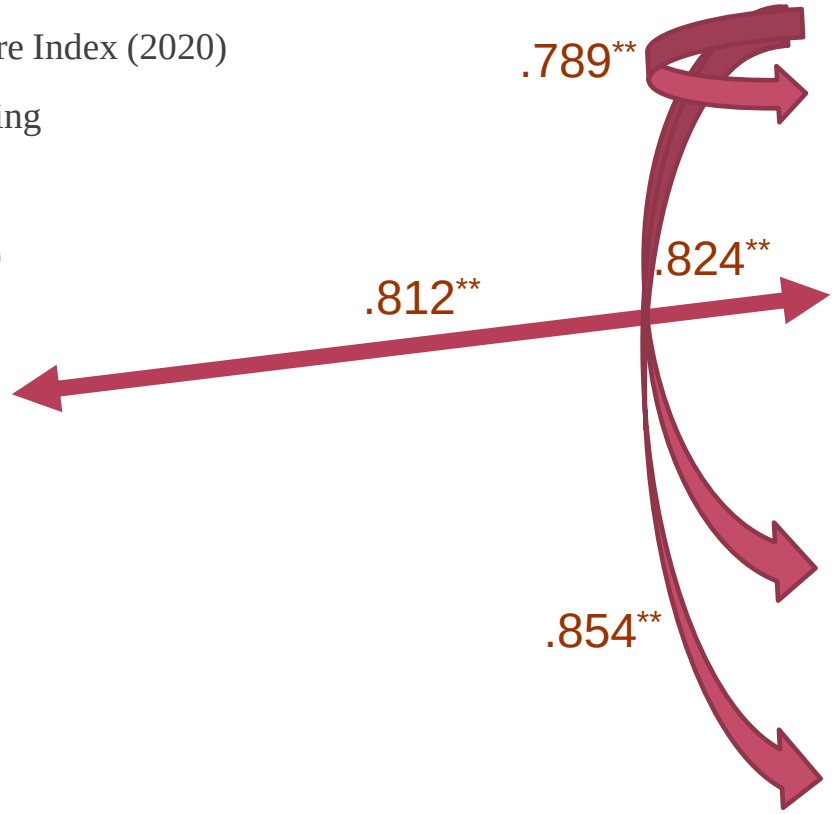

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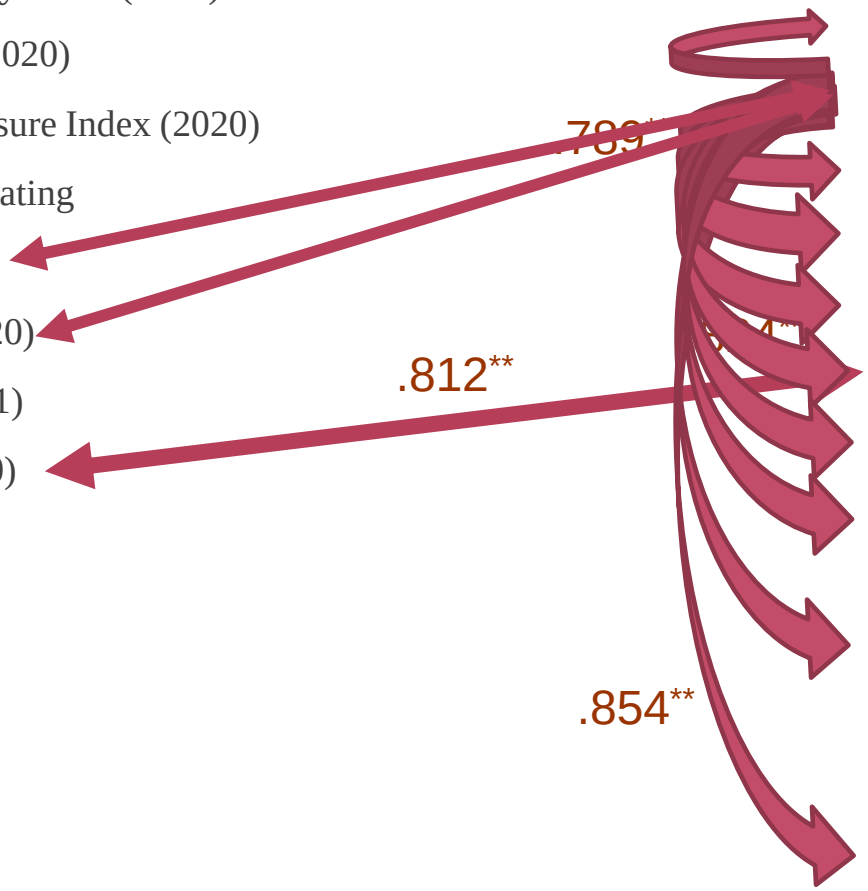

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ANALYSIS

- Multiple linear regression to built a model of prediction of password strength

MEASURES INCLUDED IN THE MODEL

- ***Voice & Accountability*** ***(source : World Bank, 2020)***

- Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

- ***Global Cybersecurity Index*** ***(source: Seon, 2020)***

- Measures the commitment of countries to cybersecurity at a global level

- ***Digital skills*** ***(source : World Bank, 2020)***

- The extent to which the active population possess sufficient digital skills (e.g., computer skills, basic coding, digital reading).

MEASURES INCLUDED IN THE MODEL

- ***Cybersecurity Exposure Index*** ***(source: Seon, 2020)***

- Signs of sensitive disclosures, exposed credentials and hacker-group activity against companies are identified.

- ***Literacy*** ***(source: World Population Review, 2022)***

- This measures the percentage of adults in a country who are able to read and write their common language.

- ***GDP per Capita*** ***(source : World Bank, 2020)***

- Gross domestic product (GDP) is the standard measure of the value added created through the production of goods and services in a country during a certain period.

RESULT (FROM MULTIPLE LINEAR REGRESSION)

- **Significantly predict password strength:**
  - Voice and accountability
  - Global Cybersecurity
  - Cybersecurity Exposure
  - Level of literacy
- **Does not predict password strength:**
  - Digital skills of the population
  - GDP per capita

INTERNET = LIBERTY

LEVEL OF VOICE AND ACCOUNTABILITY OF A POPULATION IS PREDICTIVE OF PASSWORD STRENGTH

COMMITMENT OF COUNTRIES TO SECURITY IS PROFITABLE (GLOBAL CYBERSECURITY INDEX)

- Country's commitment increases the probability of strong passwords

THE MORE YOU ARE UNDER ATTACK, THE MORE RESILIENT YOU BECOME

Awareness about the importance of protecting data with strong password when exposed to more cybersecurity incident

LITERACY IS AT THE BASIS OF KNOWLEDGE ACQUISITION

LITERACY IS DIRECTLY CONNECTED TO THE ABILITY TO USE TECHNOLOGY

NOT PREDICTING PASSWORD STRENGTH:

- Digital skills
- GDP per capita

CONCLUDING THOUGHTS

- The environnement of users affect their capacity of protecting themselves
  - Importance of countries' investment in cybersecurity
  - Democracies help users to have a better cyberhygiene
  - Resilience of users
  - General education helps
- Understanding macrosocial factors associated with cybersecurity might influence security configurations