



# The Nobel Index: Measuring True Excellence Beyond the Rankings

Presented by: Rohan Chawla



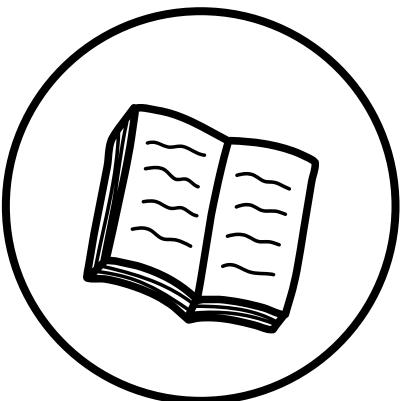
# Understanding the Ingredients of Global Academic Success

- **Explore** what makes countries and universities consistently produce Nobel laureates
- Compare global rankings with **real-world impact**
- Identify which education and R&D investments **correlate** with innovation
- Provide insights to **inform policy** and **strategic funding decisions**

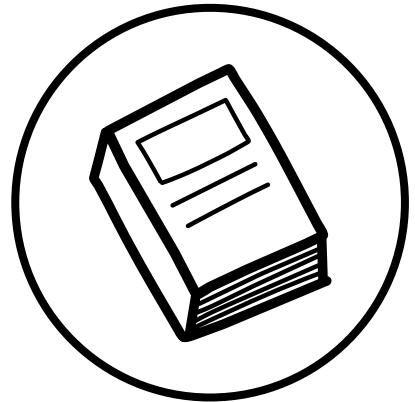




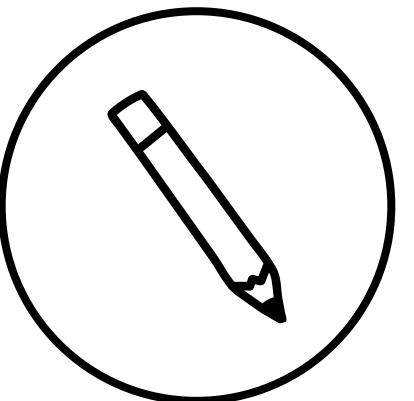
# Where Our Insights Come From



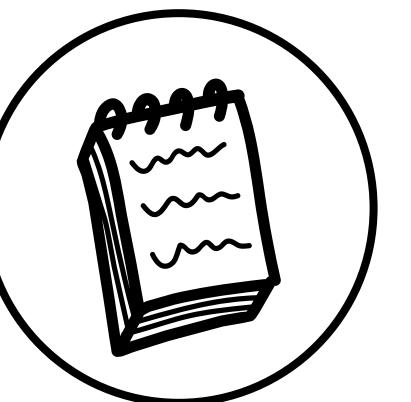
**Nobel Laureates  
Dataset**  
Source:  
[NobelPrize.org](https://NobelPrize.org)  
JSON



**National Innovation  
Indicators**  
Source: Aggregated  
country-level data  
(CSV)



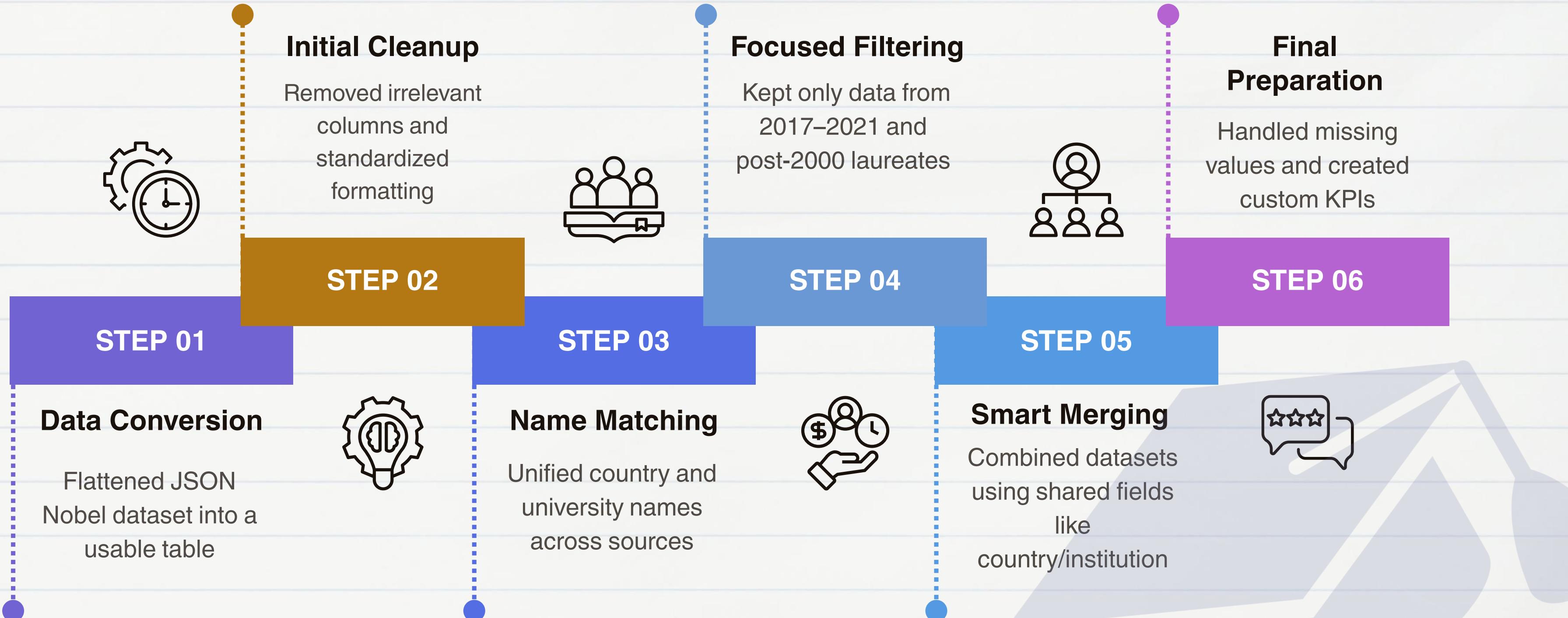
**QS World  
University  
Rankings (2025)**  
Source: QS CSV file

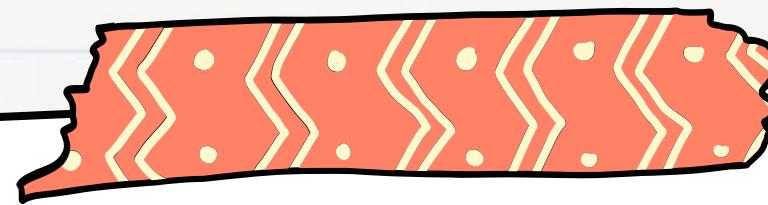


**Human  
Development  
Index (HDI)**  
Source: UNDP  
HDI.csv



# Data Wrangling Workflow





# **Which national innovation indicators are most strongly associated with Nobel Prize productivity across countries?**



# Method

## Data Averaging

Aggregated  
national KPIs  
from 2017–2021

## Dataset Integration

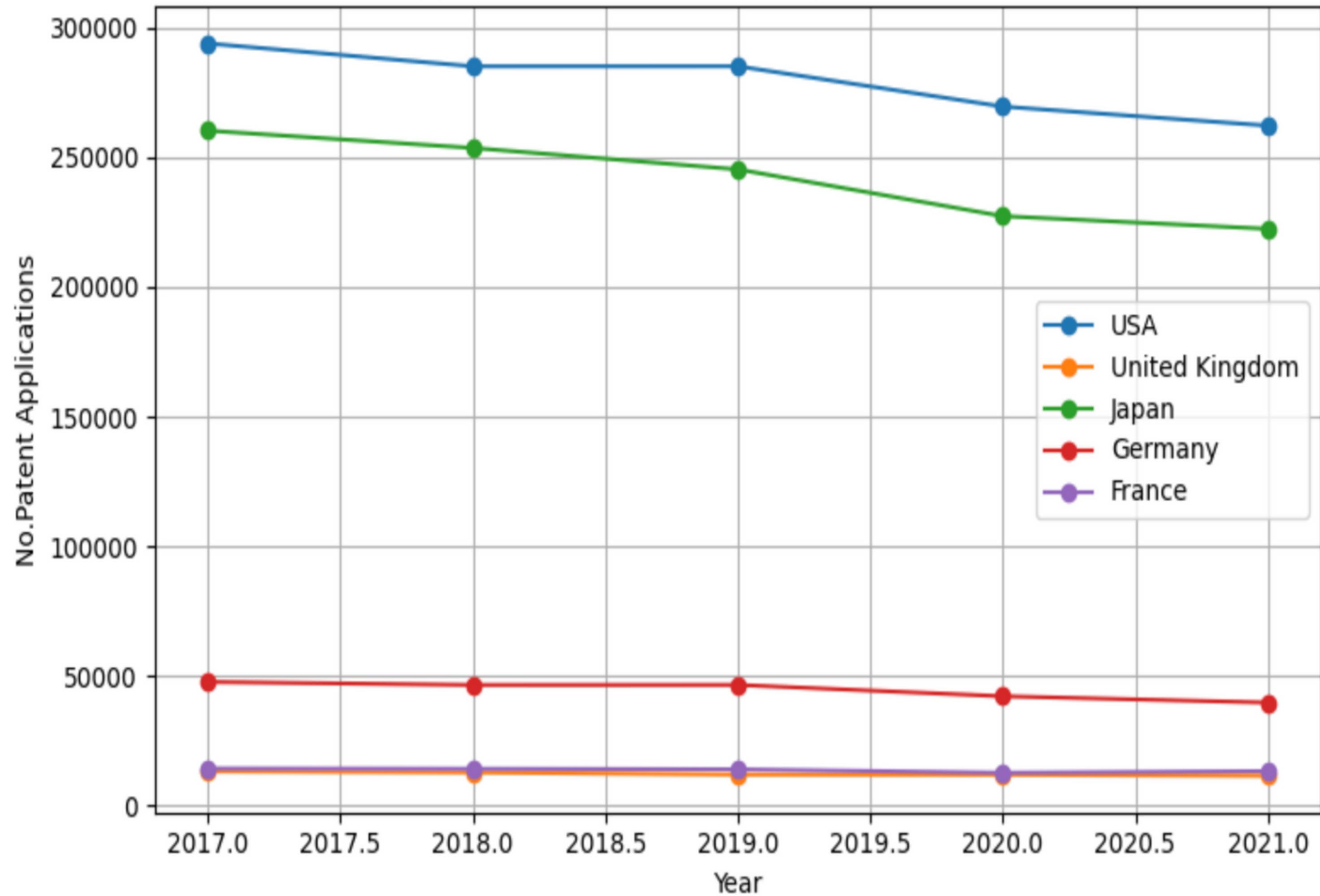
Merged with  
Nobel laureate  
counts (2000–  
2023)

## Correlation Analysis

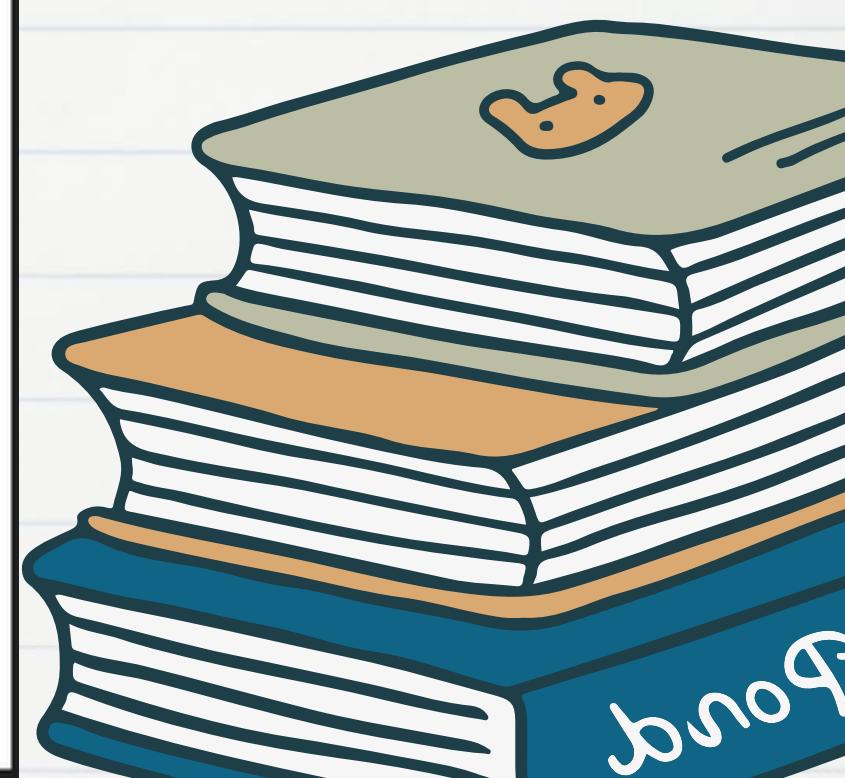
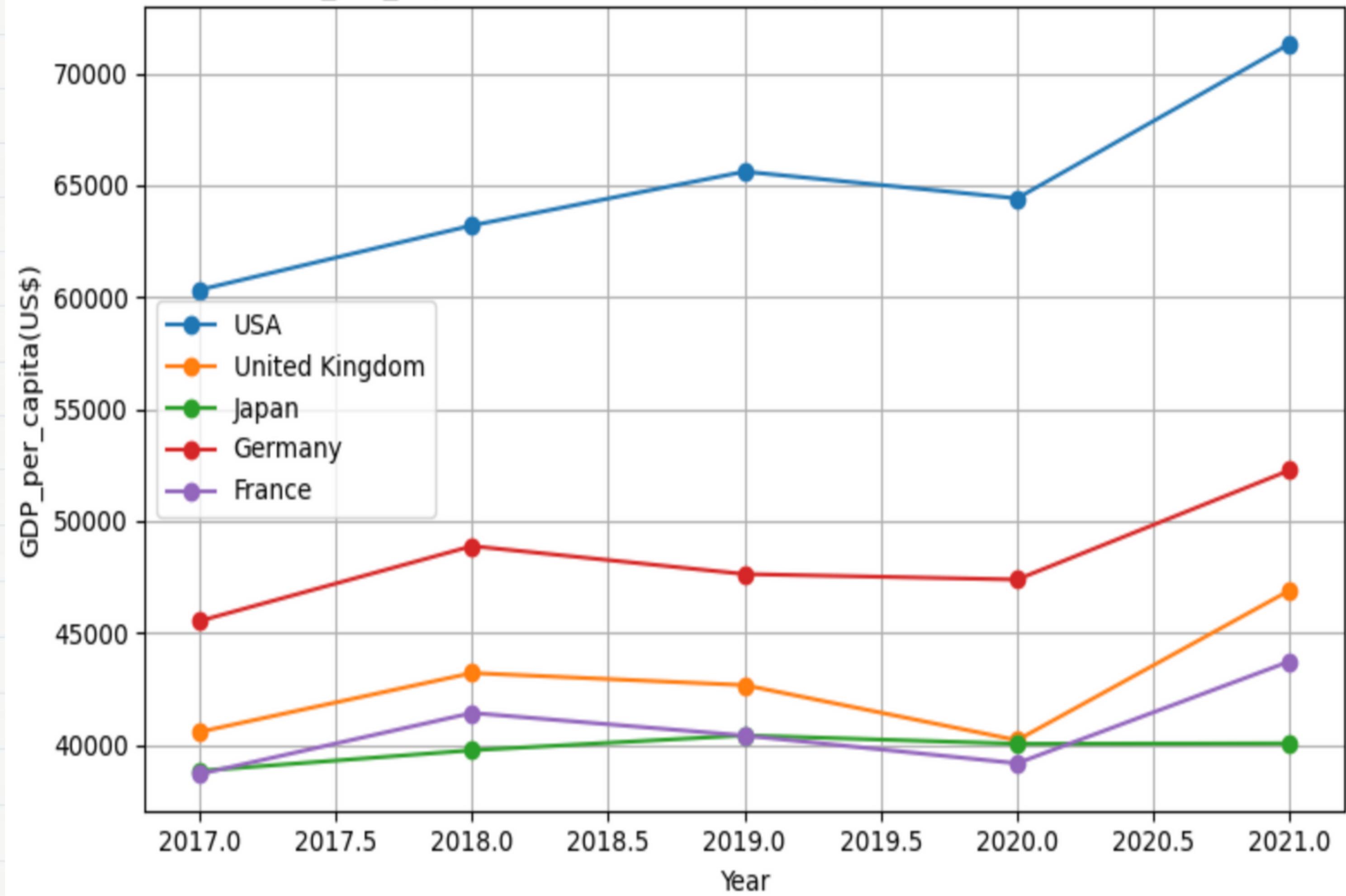
Measured  
strength of  
association  
between  
variables



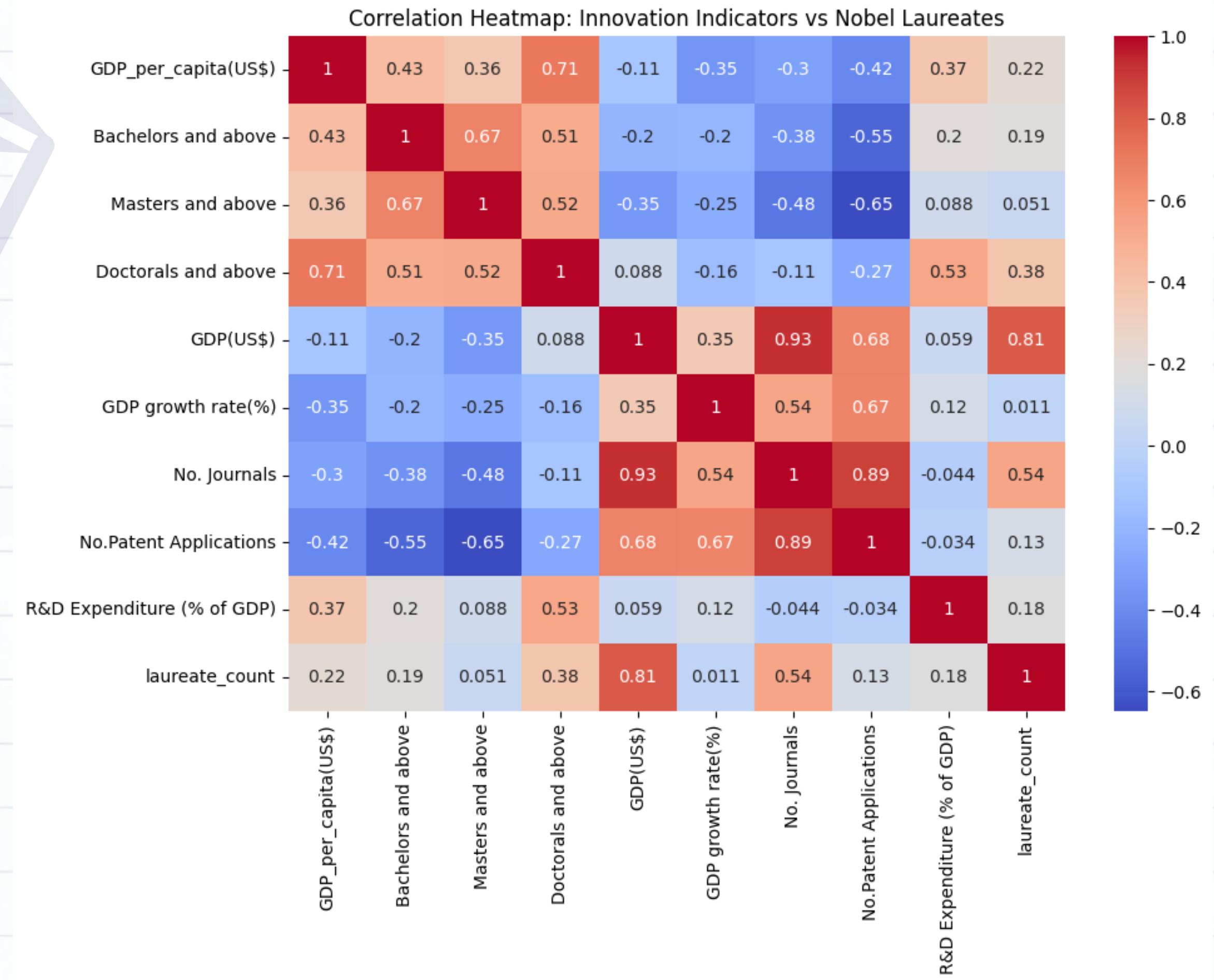
# No.Patent Applications (2017-2021) - Top 5 Nobel Laureate Countries



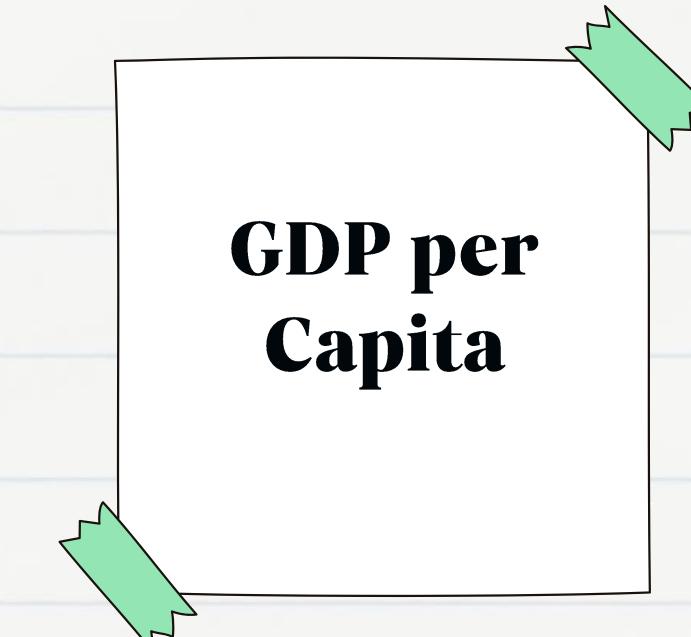
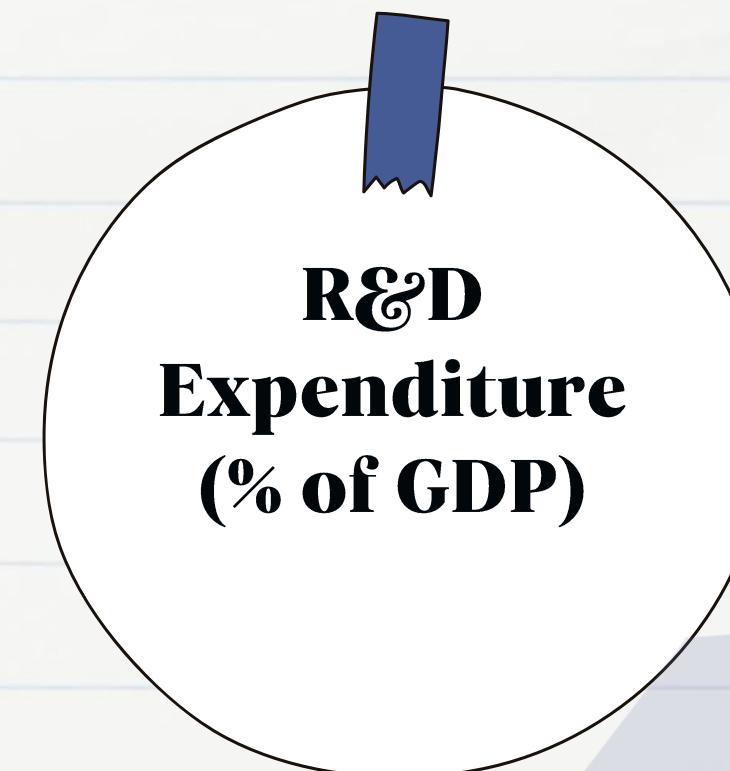
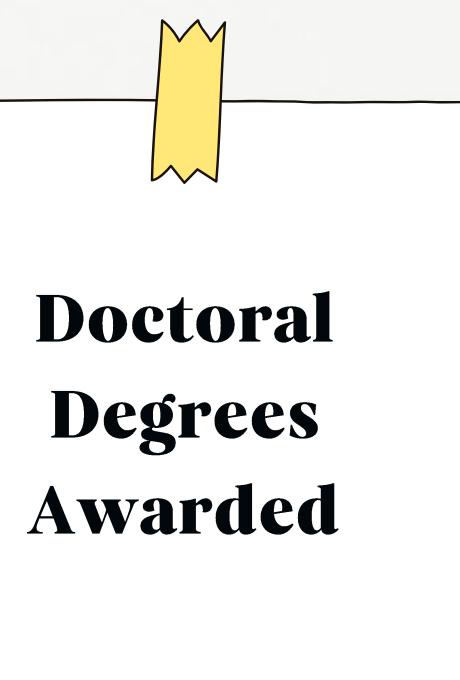
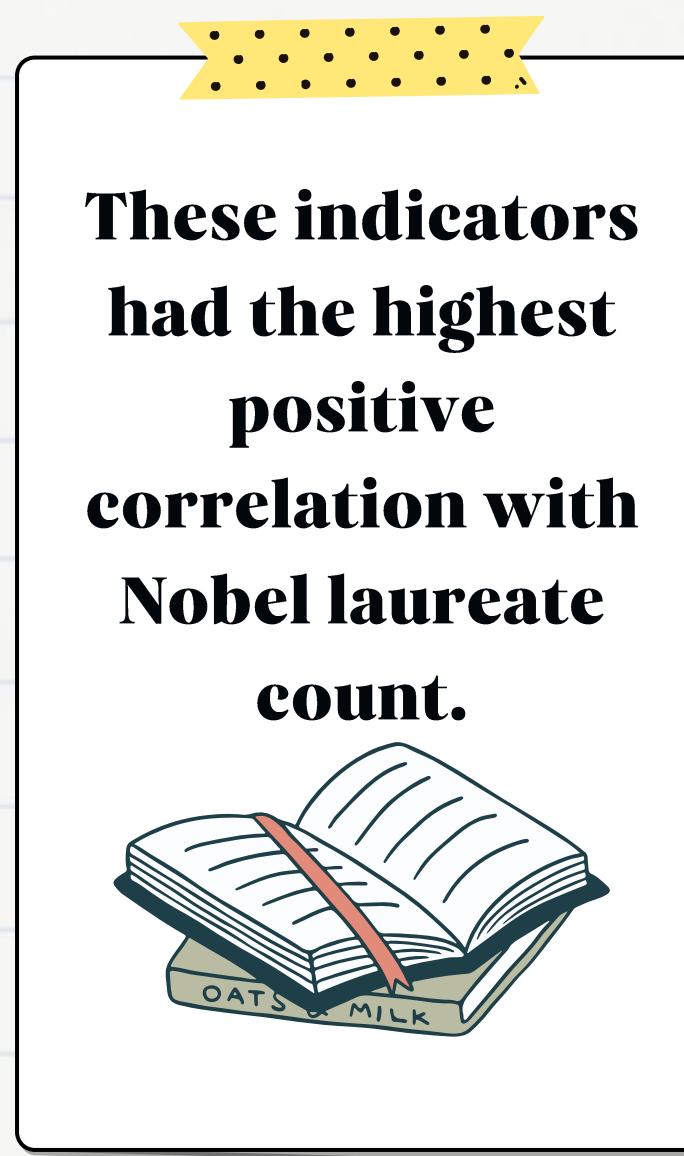
# GDP\_per\_capita(US\$) (2017-2021) - Top 5 Nobel Laureate Countries

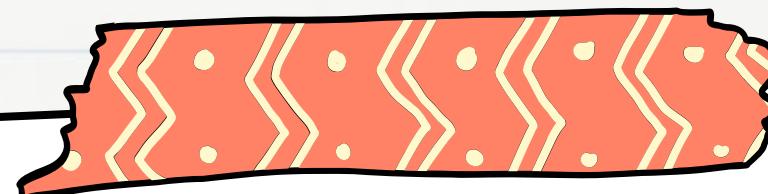


# VISUALISATION

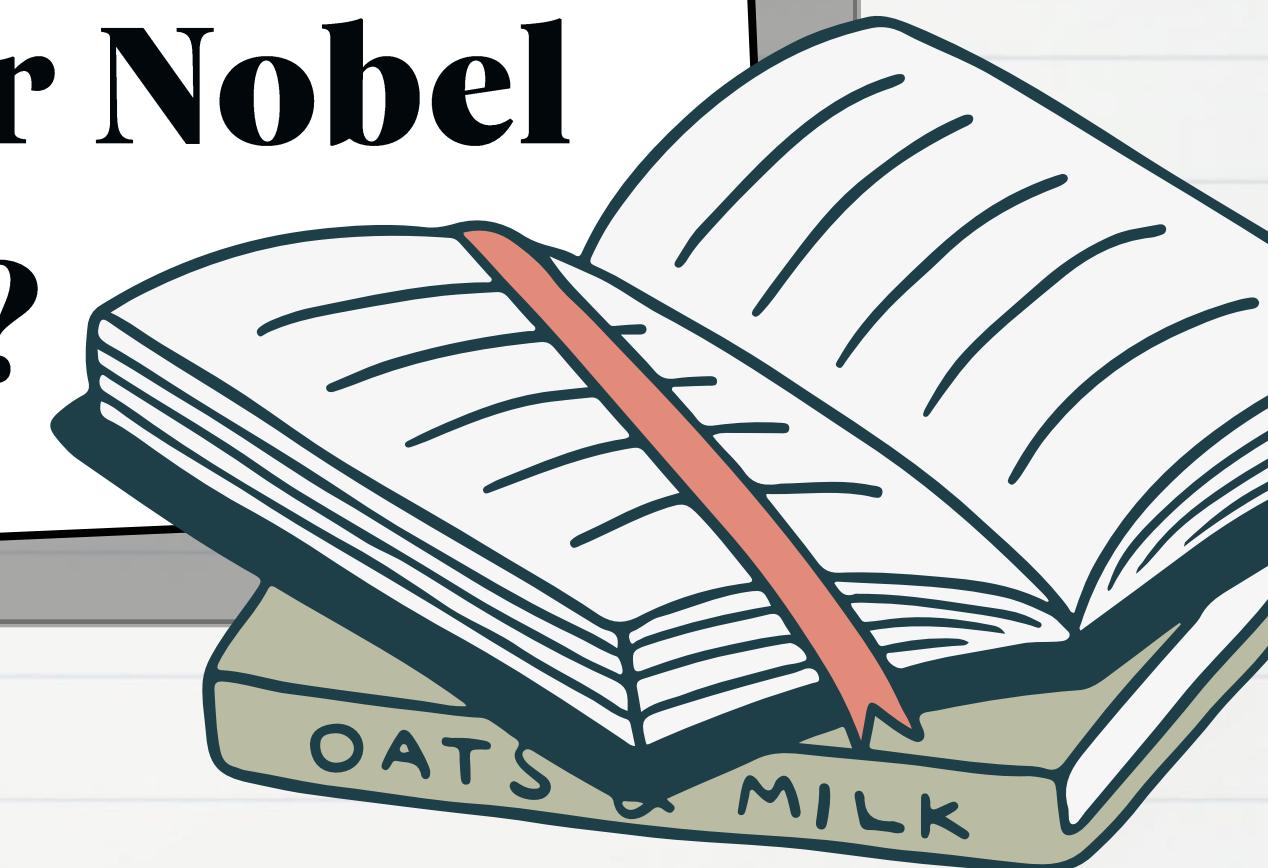


# TOP FINDINGS

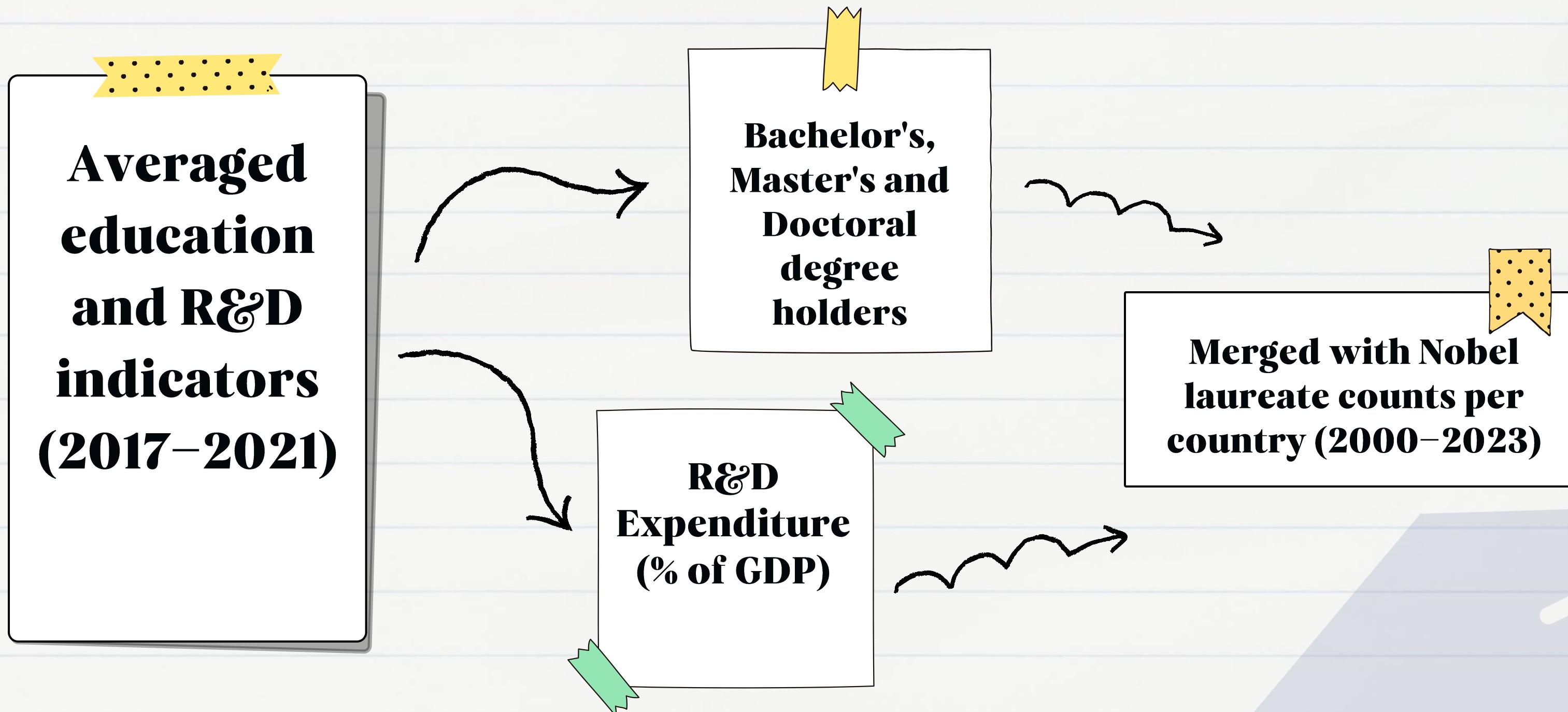




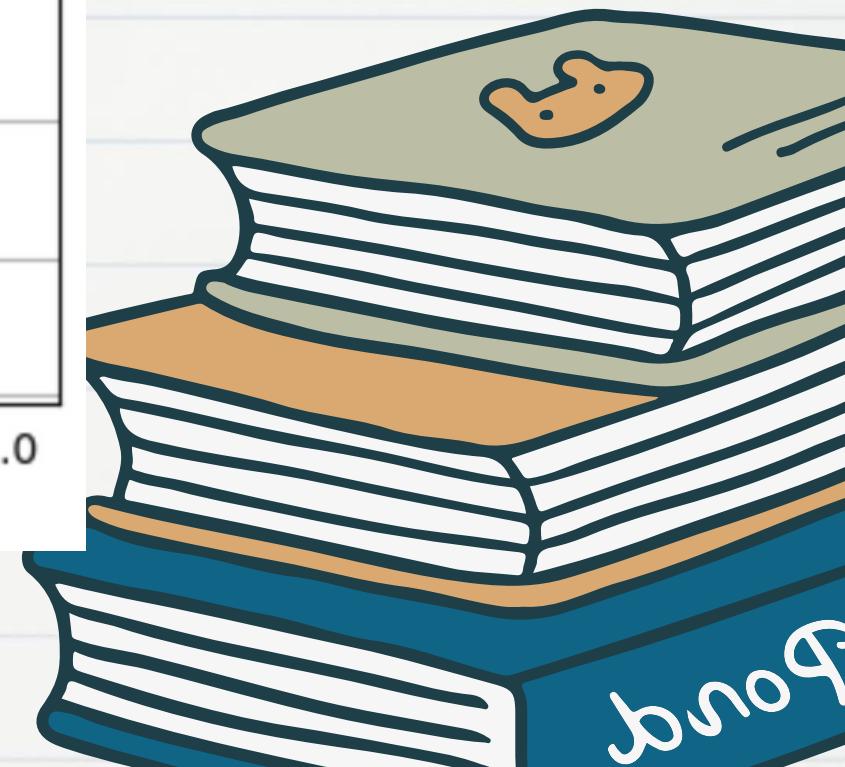
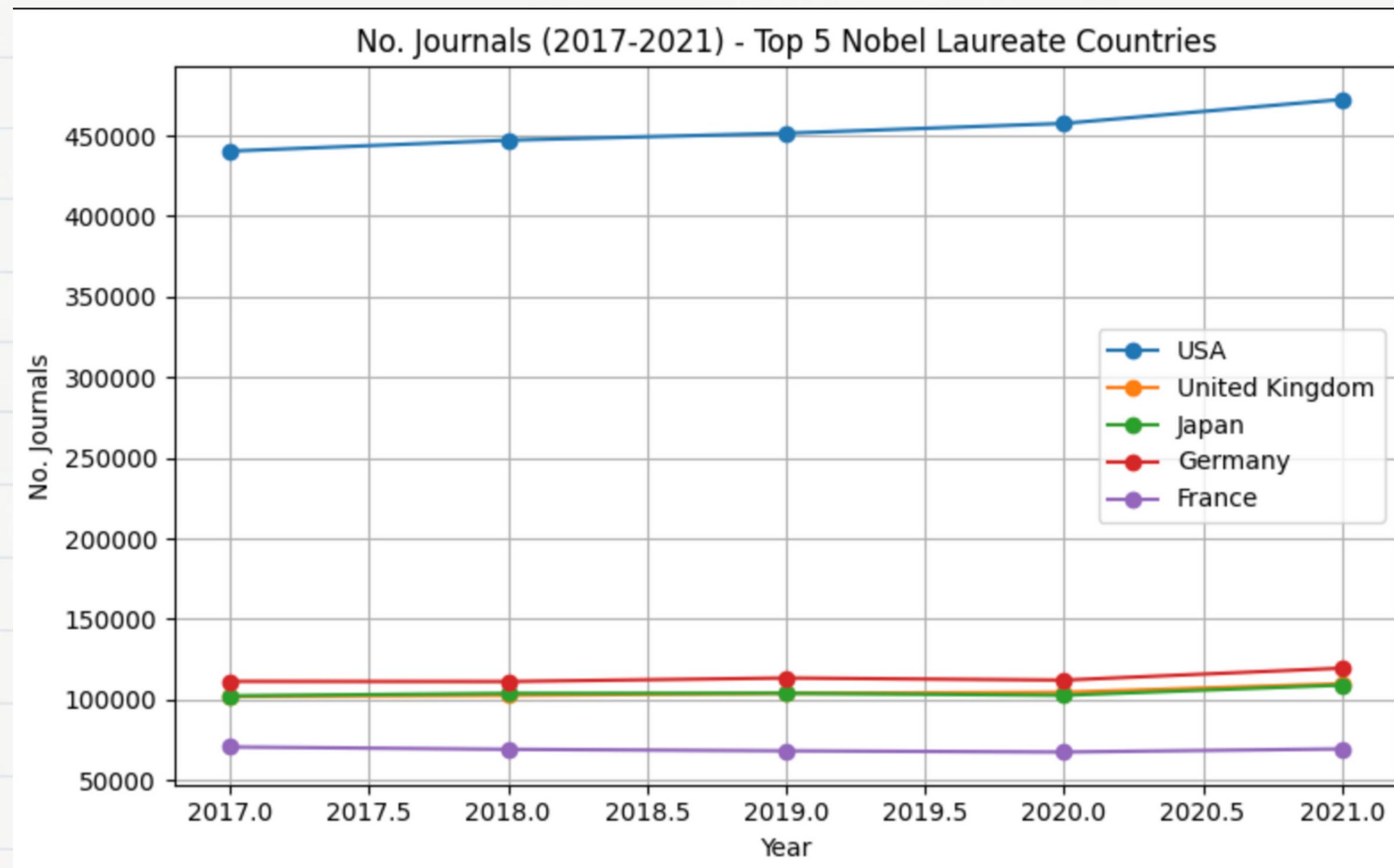
**Which countries demonstrate  
consistent investment in  
education and R&D, and how  
does this relate to their Nobel  
laureate output?**



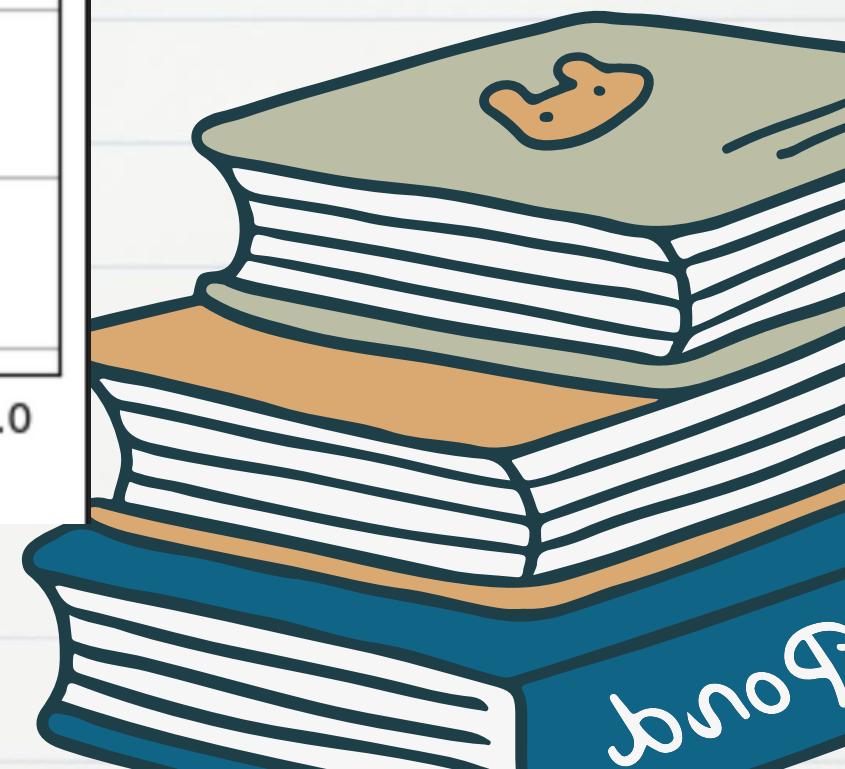
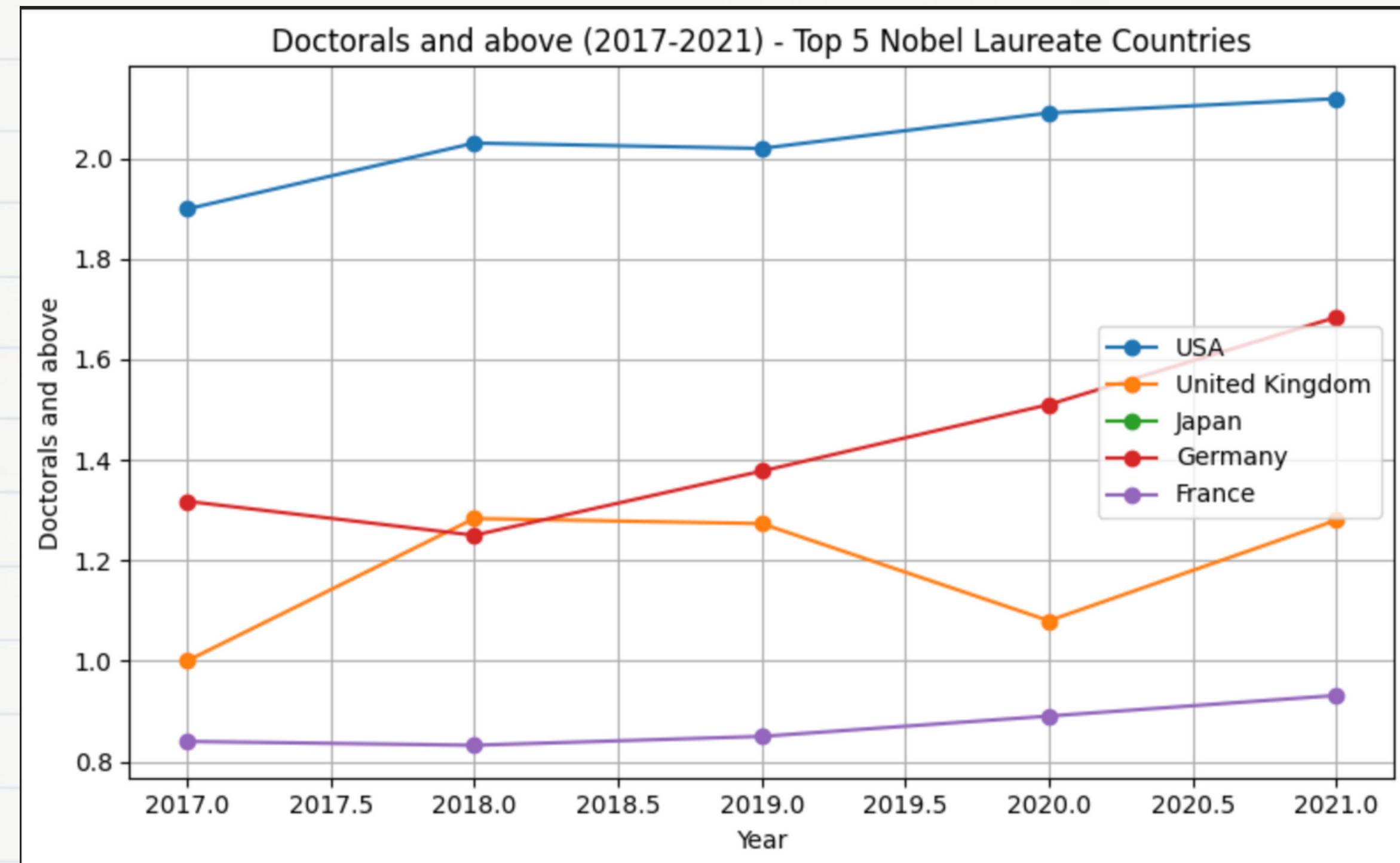
# METHOD



# Important Statistic

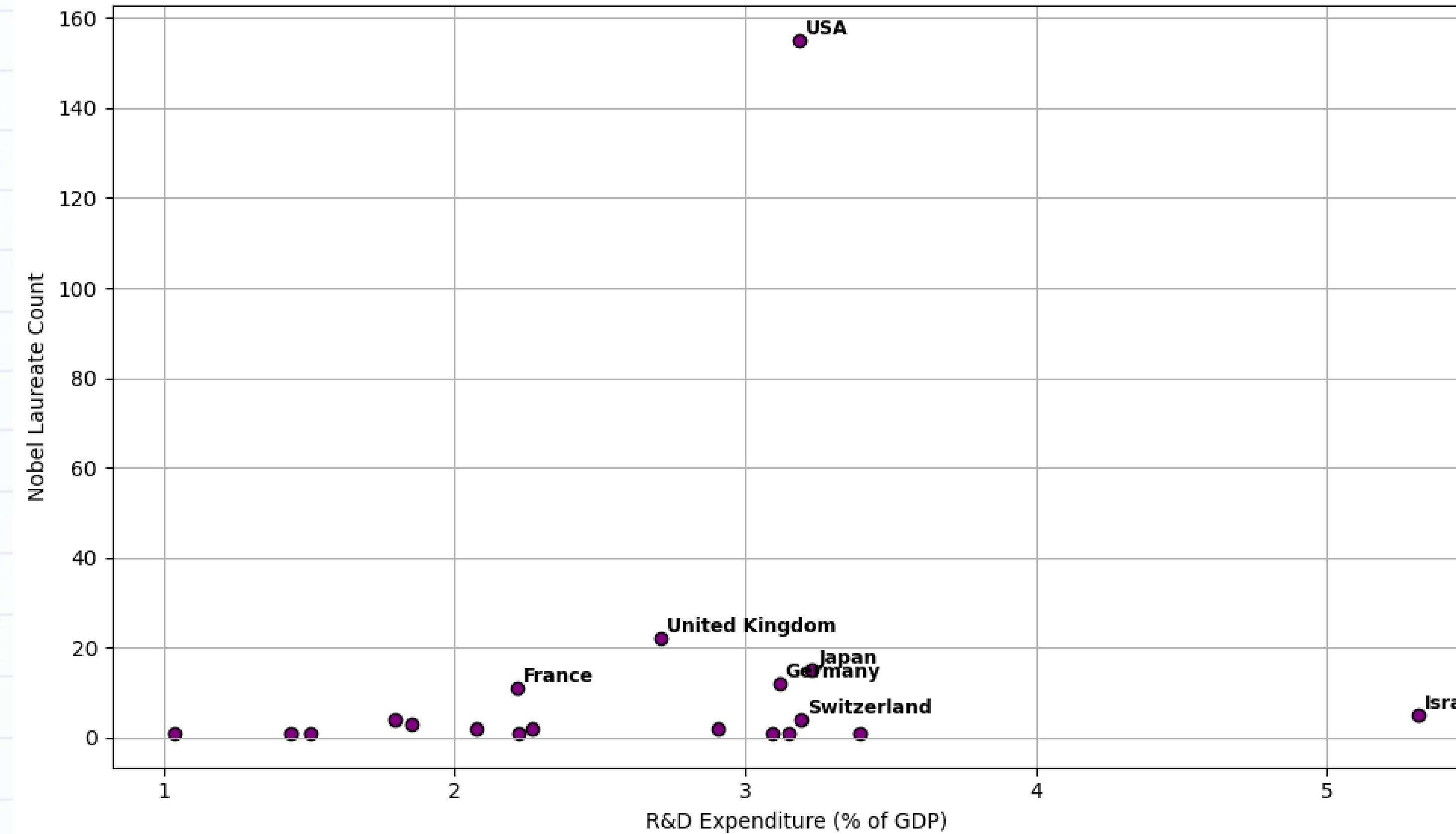


# Important Statistic



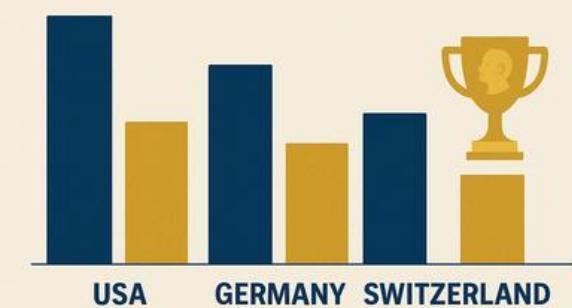
# VISUALISATION

Top Countries by Nobel Laureates vs R&D Investment



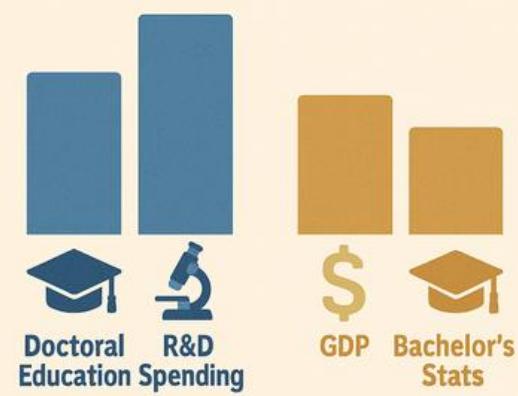
# TOP FINDINGS

USA, GERMANY, SWITZERLAND, AND JAPAN TOP BOTH INVESTMENT AND NOBEL OUTPUT



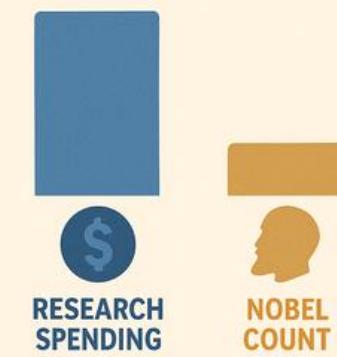
USA, Germany, Switzerland, and Japan top both investment and Nobel output

DOCTORAL EDUCATION & R&D SPENDING vs GDP & BACHELOR'S STATS



Doctoral-level education and R&D spending are stronger signals.

SOME COUNTRIES INVEST HEAVILY BUT HAVEN'T YET CONVERTED THAT INTO NOBEL OUTPUT

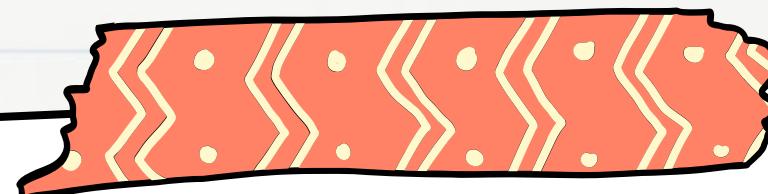


Some countries invest heavily but haven't yet converted that into Nobel output

LAG EFFECT & SYSTEM INEFFICIENCIES



lag effect or system inefficiencies



**Do top-ranked universities in  
the QS World Rankings also  
tend to produce more Nobel  
Laureates?**



# Method



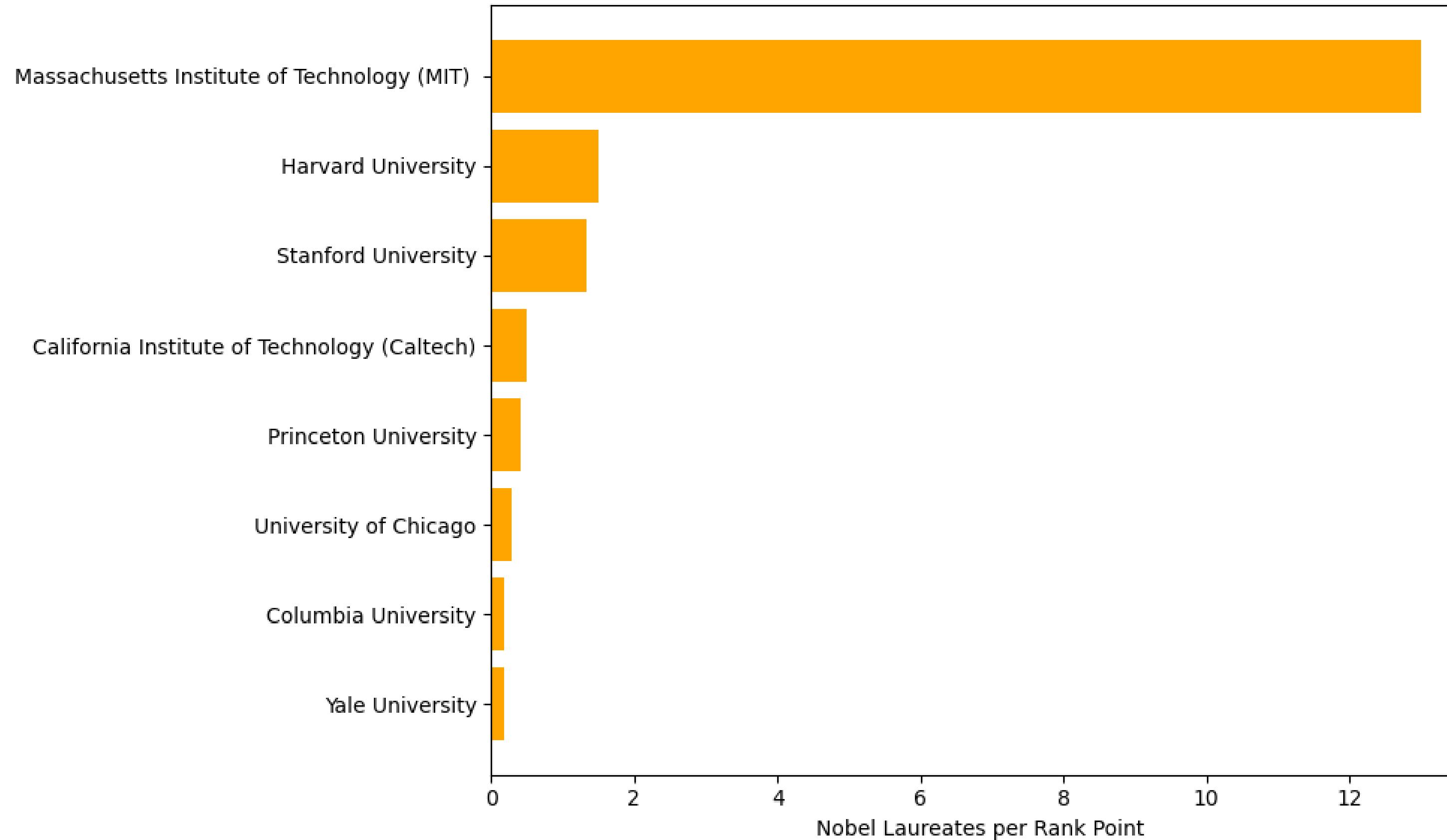
Filtered for  
universities  
ranked in QS  
Top 100 (2025)

Calculated a  
new metric:  
**Nobel  
Laureates / QS  
Rank = "Nobel  
Productivity  
Efficiency"**

Sorted  
institutions  
based on this  
metric

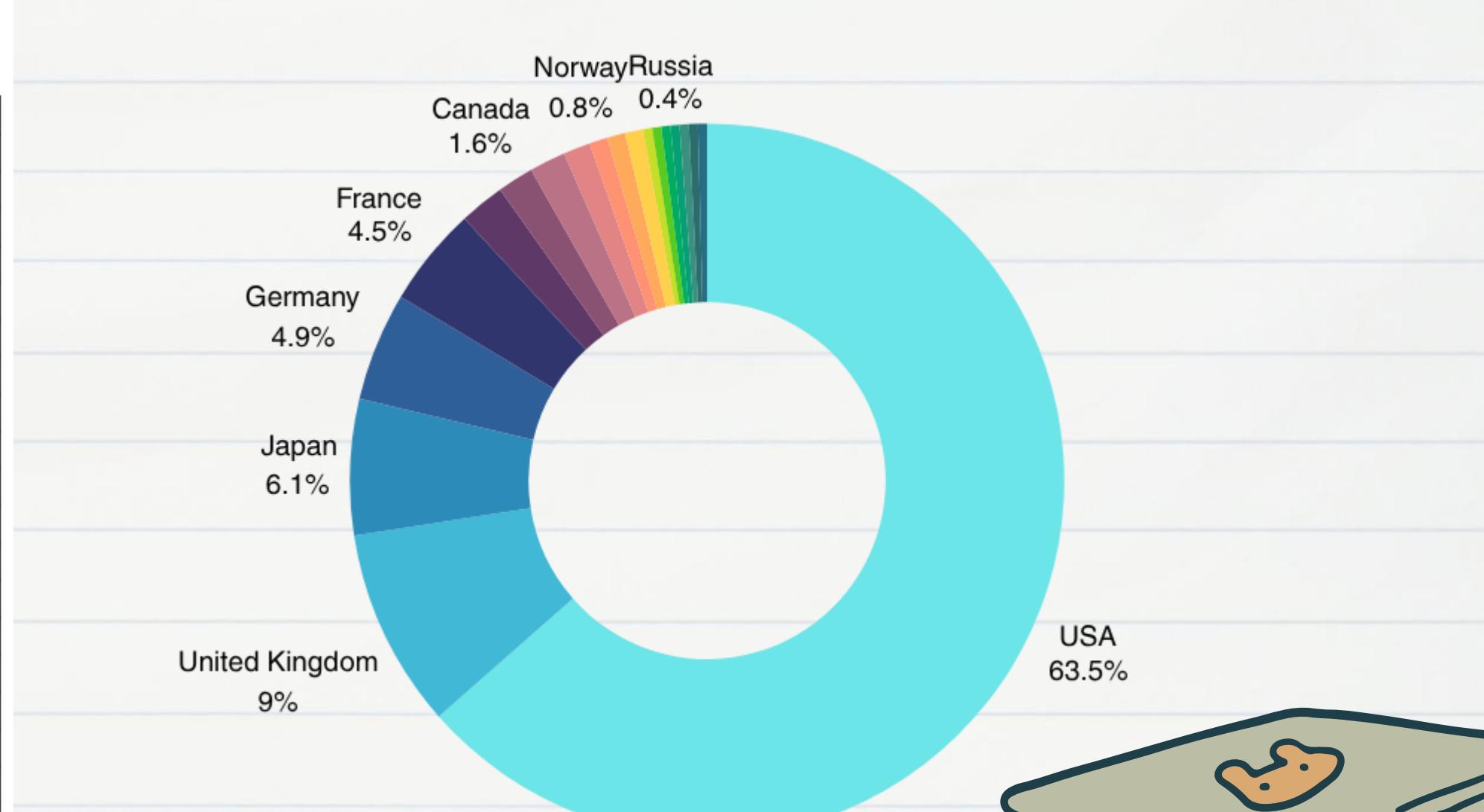
# VISUALISATION

Top 8 Universities by Nobel Productivity (Adjusted for QS Rank)



# Important Statistic

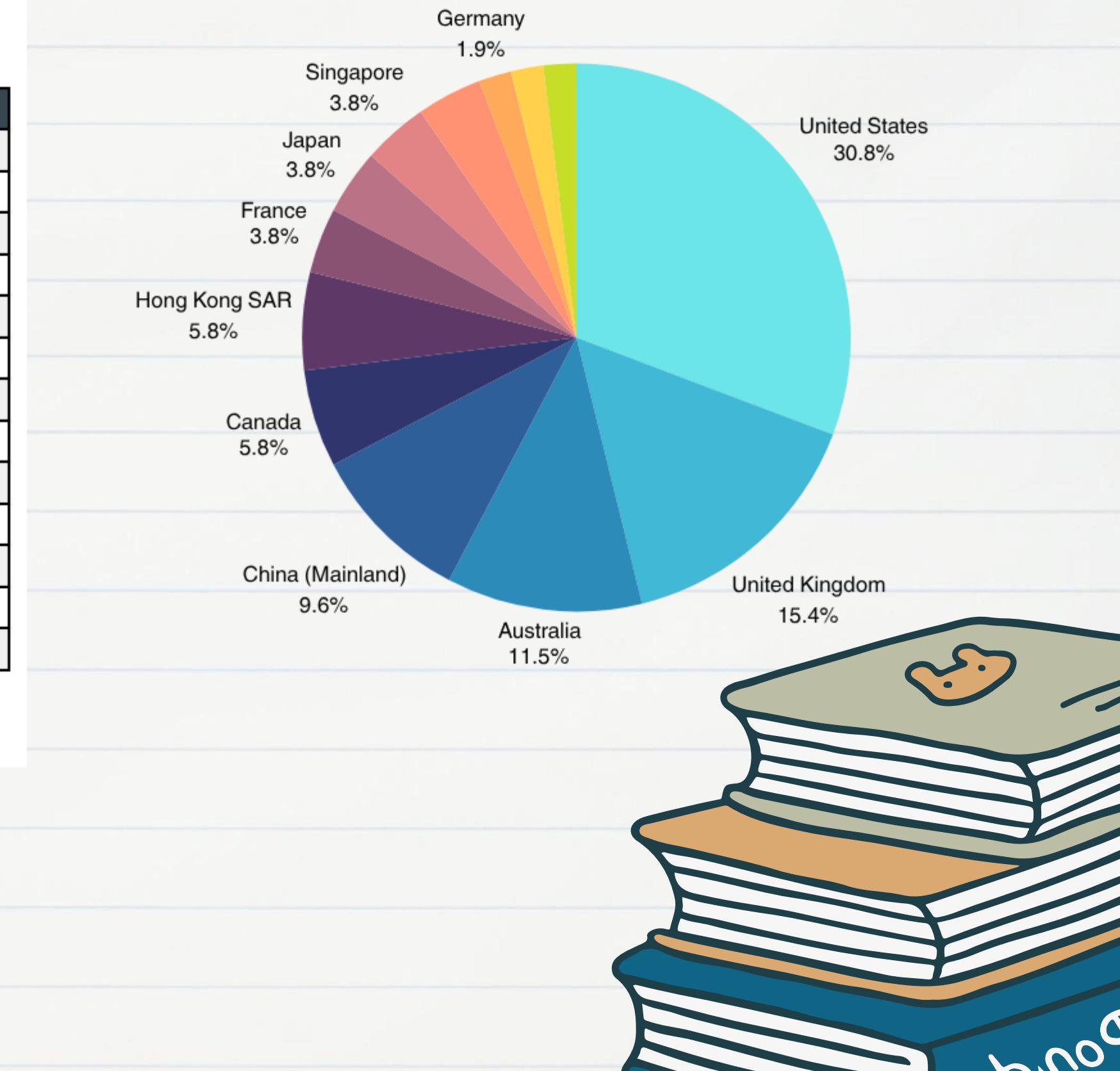
Affiliation Country	Laureate Count	Distinct Birth Countries
USA	155	26
United Kingdom	22	9
Japan	15	2
Germany	12	6
France	11	5
Israel	5	4
Canada	4	2
Switzerland	4	1
Australia	3	2
Norway	2	1
Denmark	2	2
China	2	1
Austria	1	1
Italy	1	1
Hungary	1	1
Russia	1	1
Sweden	1	1
Belgium	1	1
the Netherlands	1	1

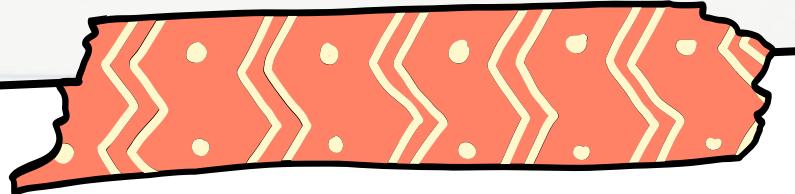


# Important Statistic

## TOP 50 QS WORLD RANKINGS

Location	University Count
United States	16
United Kingdom	8
Australia	6
China (Mainland)	5
Canada	3
Hong Kong SAR	3
France	2
Japan	2
Singapore	2
Switzerland	2
Germany	1
Netherlands	1
South Korea	1





# WEB SCRAPPING

How do individual QS ranking criteria (like citations per faculty, sustainability, and research networks) relate to Nobel laureate output?



# Why This Couldn't Be Answered with Our Combined Data?



The QS dataset we used only contained overall rank and score.

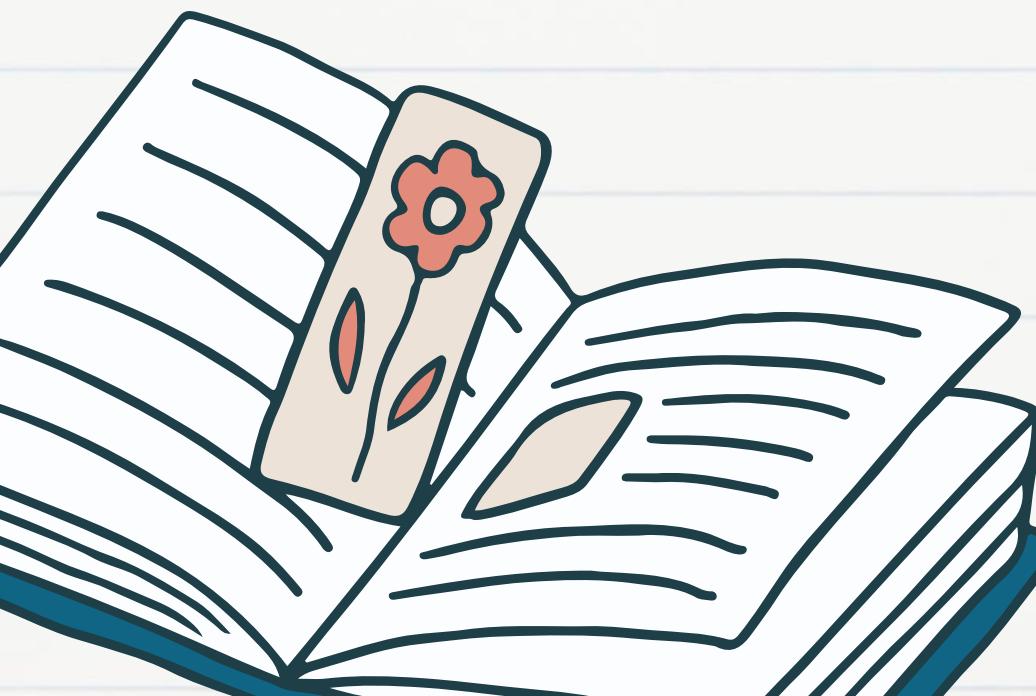


It lacked component-level metrics such as:

- Academic Reputation
- Employer Reputation
- Citations per Faculty
- International Research Network
- Sustainability



Without these, we couldn't analyze which specific performance factors align most closely with Nobel success.



## Table of contents

Overview

2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
#31	<b>#40</b>	<b>#=37</b>	<b>#27</b>	<b>#31</b>	<b>#33</b>	<b>#32</b>	<b>#35</b>	<b>#36</b>	<b>#40</b>	<b>#44</b>

Programmes

2024	2025
<b>#29</b>	<b>#42</b>

University Information

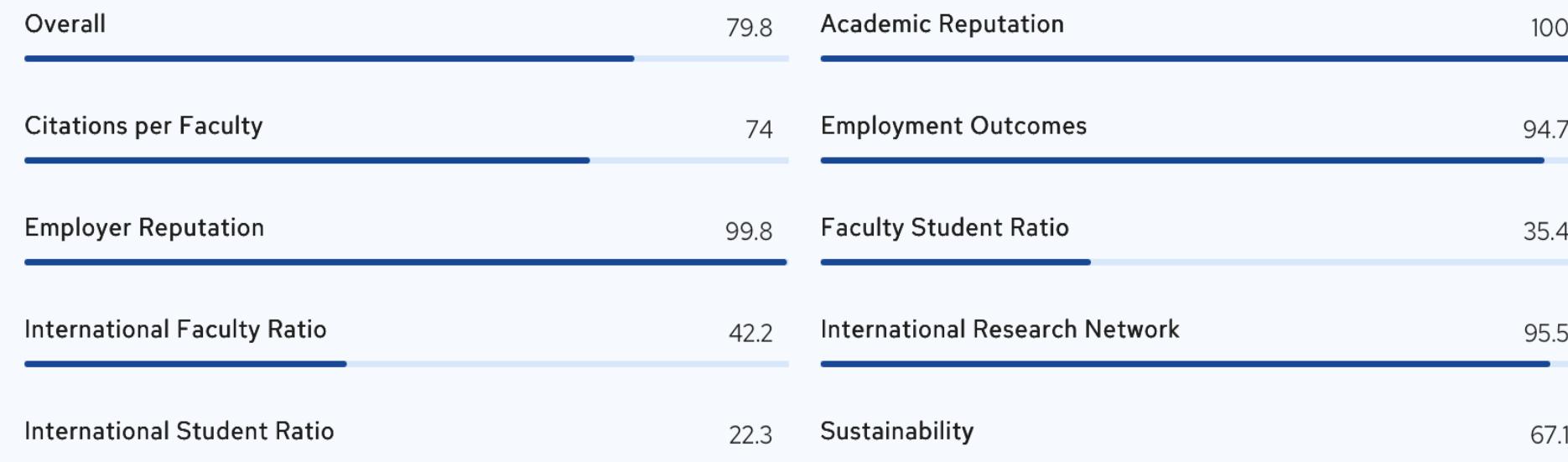
Scholarships

## Rankings & Ratings

Campus Locations

Similar Universities

### Ranking criteria



[View all rankings data →](#)

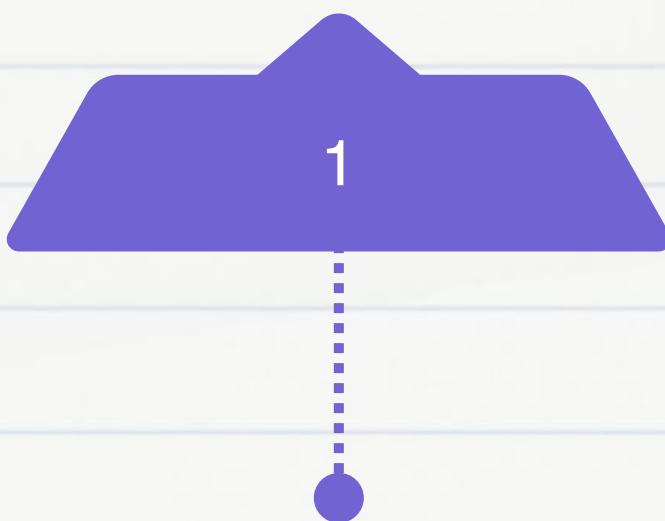
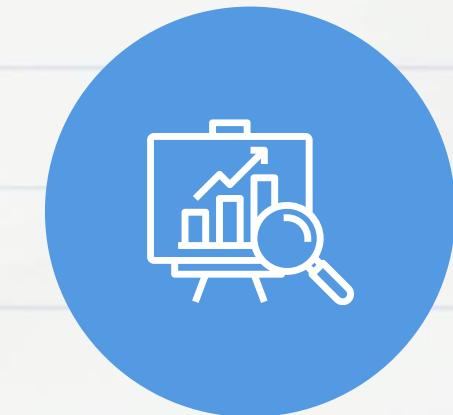
# RECOMMENDATIONS



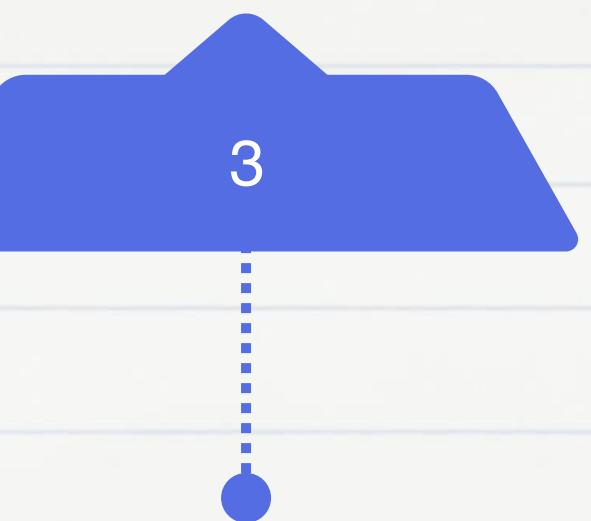
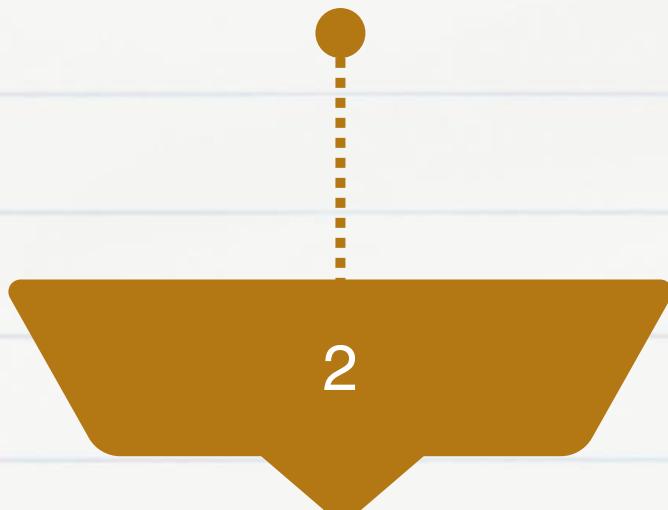
Create an Efficient,  
Collaborative  
Research System



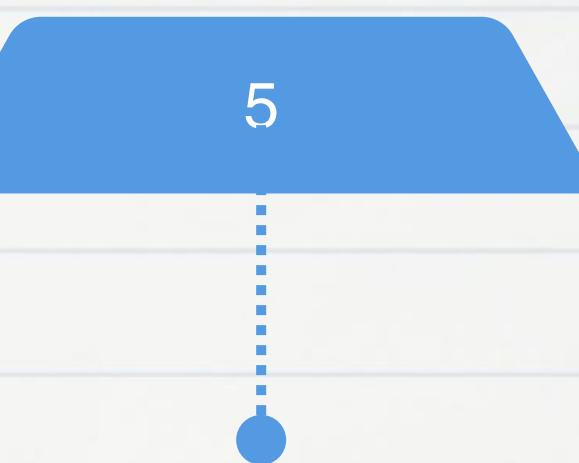
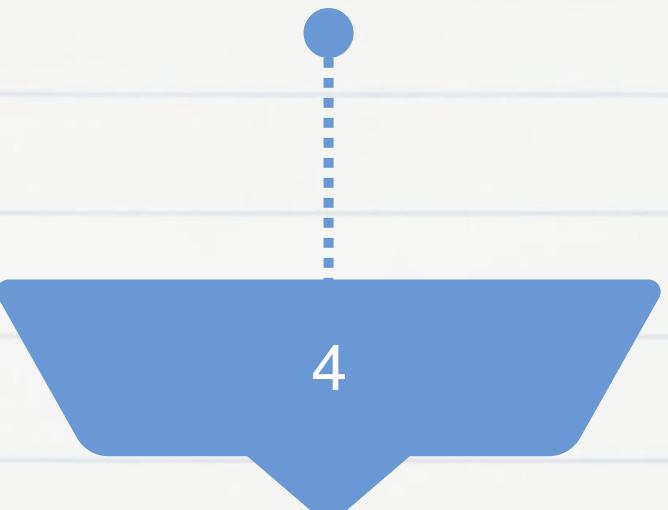
Promote  
Publications &  
Patents



Boost Long-Term  
R&D & Doctoral  
Funding



Support High-  
Potential  
Institutions



Adopt Balanced  
Research Metrics

# THANK YOU

