

British Parliament Member Birthplace

The Birthplaces Distributions of Members in British Parliament

From 1801 to 2024 Based on Wikidata

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**The Birthplaces Distributions of Members in British Parliament**  
**From 1801 to 2024 Based on Wikidata Data**

The British Parliament has played a pivotal role in shaping both the history and contemporary governance of the United Kingdom. As the central legislative body, it has overseen the nation’s operation and development, undergoing substantial transformations over the past few centuries. The geographical origins of Members of Parliament (MPs) offer a unique perspective on these changes, reflecting broader socio-political shifts within the country.

This report examines the distribution of MPs' birthplaces from 1801—the year of the United Kingdom's formal establishment—to 2024. Wikidata, a collaboratively maintained and extensive knowledge base, serves as the primary data source. Through systematic analysis, this study seeks to explore how historical and political influences are reflected in the birthplaces of MPs and, conversely, how these patterns may have contributed to shaping the nation's political landscape.

**Data Collection**

All data used in this study were retrieved from Wikidata via the Wikidata Query Service using SPARQL. This project requires the collection of information on Members of Parliament, including their names, birthplaces, geographical coordinates of their birthplaces, political party and the start and end dates of their parliamentary service. The following SPARQL query was used to extract the dataset employed in this analysis from Wikidata.

```
1. SELECT ?member ?memberLabel ?parliament ?parliamentLabel ?birthPlace ?birthPlaceLabel
   ?coordinates ?start ?end ?party ?partyLabel
2. WHERE {
3.   ?member p:P39 ?statement.
4.   ?statement ps:P39 ?parliament;                # which parliament MP belongs
5.             pq:P580 ?start;                      # Parliament memberships starts
6.             pq:P582 ?end.                        # Parliament memberships ends
7.   ?parliament wdt:P279 wd:Q16707842.             # MP Subclass
8.   ?member wdt:P19 ?birthPlace.                   # MP Birthplace
9.
10.  OPTIONAL {
11.    ?birthPlace wdt:P625 ?coordinates.            # Birthplace geographical coordinates
```

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```
12. }  
13.  
14. OPTIONAL {  
15.   ?member wdt:P102 ?party.           # Political party  
16.   ?party rdfs:label ?partyLabel.  
17.   FILTER(LANG(?partyLabel) = "en").  
18. }  
19.  
20. SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO_LANGUAGE],en". }
```

This SPARQL query retrieves data related to Members of Parliament (MPs) by identifying their position held and the corresponding qualifiers for their start and end dates in office. Additionally, it extracts subclasses of Members of Parliament, retrieving each MP's birthplace along with the geographical coordinates of their place of birth. The extracted dataset was saved as a CSV file for subsequent data cleaning and analysis.

For data cleaning and analysis, several Python libraries were employed, including pandas, matplotlib, and folium. Pandas is a powerful data analysis and manipulation tool that facilitates the handling of CSV files. With its assistance, unnecessary data (such as Wikidata links) were removed, and column names were standardised to improve readability and clarity. Moreover, pandas were utilised to extract data for visualisation with matplotlib and folium.

Matplotlib was used to generate line graphs, providing a clear representation of trends over time. Meanwhile, folium was employed for geographical visualisation and spatial analysis. This library generates an interactive HTML map, viewable in a web browser, which enhances data exploration by allowing users to zoom, pan, and interact with plotted locations. The integration of folium's flexible Bootstrap framework further improves usability, enabling convenient data inspection and interaction.

### Data Cleaning and Organisation

After retrieving the dataset in CSV format, it was necessary to clean and organise the data to ensure clarity and usability for analysis. The initial dataset included each Member of Parliament's name, the parliament to which they belonged, their birthplace, and the

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geographical coordinates of their birthplace, along with corresponding Wikidata links for all these elements

Using the Pandas library, the dataset was processed to remove unnecessary information. Specifically, Wikidata links were eliminated, column names were standardised for improved readability, and any extraneous or modified entries were filtered out. Only the data essential for analysis were retained. The following structure presents the dataset after the cleaning and organisation process.

```
1. parliament,member,birthPlace,coordinates,start,end,party
2. 58,Nadhim Zahawi,Baghdad,(44.366111111 33.315277777),2019,2024,Conservative Party
```

After completing the initial cleaning and organisation of the dataset, the next step involved analysing the data. This analysis process was divided into two key components: data extraction and visualisation.

The data extraction process was primarily achieved using the Pandas library. Several programmes were developed to extract the required data, focusing on two key aspects: MPs grouped by the parliament they belonged to, MPs grouped by the period during which they served

These extraction methods were designed to account for the unique political structure of the United Kingdom, particularly its general election cycles. Due to the UK's electoral system, a single electorate may have multiple MPs serving in the same parliament, and an individual MP can serve across different parliaments.

Parliament-based extraction allows users to define a range of parliaments they wish to analyse. For instance, users can specify a start and end parliament (e.g., from the 11th to the 21st parliament) and extract MPs' data from this range into a single file. Where year-based extraction enables users to define a specific time frame by specifying start and end years. The programme identifies MPs whose service periods overlap with the designated range, ensuring a comprehensive view of the dataset for the specified time frame. Regardless, at the end of both extractions, the repeat MP name will be removed to ensure the statics accuracy.

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The visualisation stage utilises the extracted data to generate insightful graphical representations. In this assignment line graphs, plot maps and heat maps will be employed as visualisation. Static line graph is generated using the matplotlib library to illustrate trends and patterns over time. And both plot maps and heat maps were created using folium, leveraging geographic data. Plot maps is interactive, allow users to explore the dataset by clicking on plotted points to view information such as MPs' names. Heat maps provide a visual representation of data density, with adjustable parameters such as radius and blur effects to refine the visualisation.

The combination of these visualisation tools offers both static and interactive perspectives on the dataset, enabling comprehensive analysis of the spatial and temporal dimensions of MPs' distribution.

### **Analysis**

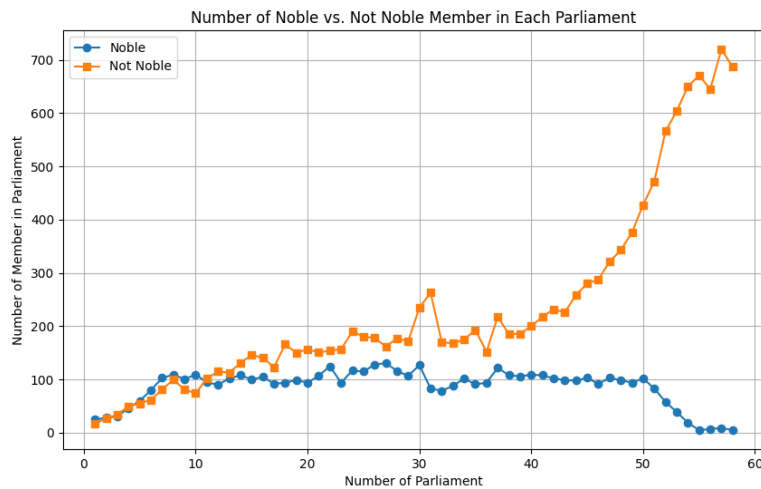
Using the methods described above, several key trends were identified in the distribution of MPs' birthplaces over time. These trends indicate that MPs' birthplaces have become increasingly urban, more concentrated around London, and more diverse as the country has grown economically and politically over the centuries.

#### **Increased British Parliament was first established Urbanisation**

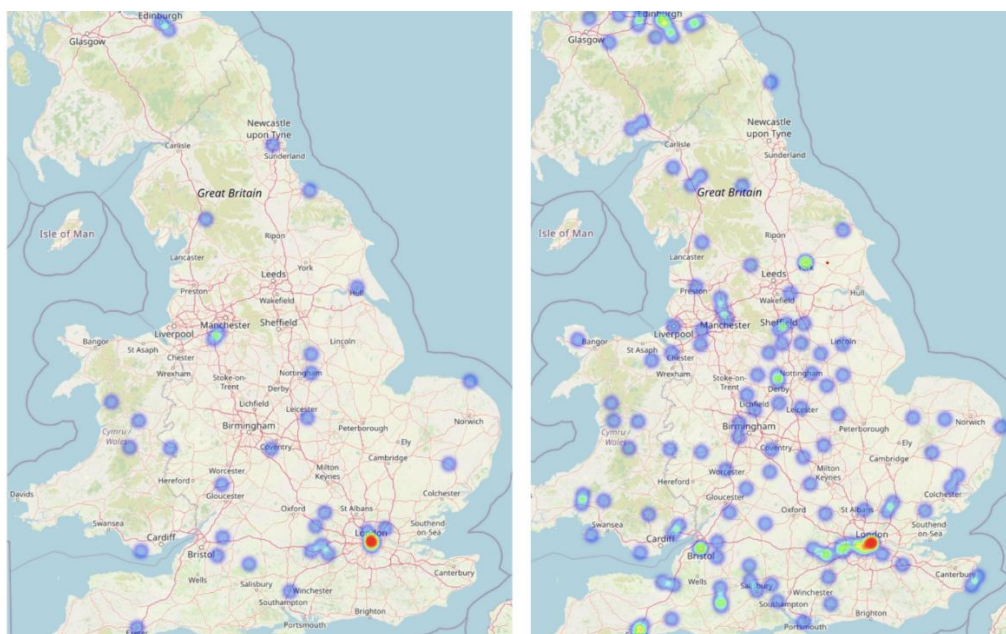
When the in 1801, political power was predominantly controlled by the nobility. Many of these nobles held large estates due to their aristocratic titles and were typically born in the countryside. As a result, the birthplaces of MPs during this early period were widely

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dispersed across rural areas rather than concentrated in urban centres.



A significant shift can be observed around the 11th Parliament (1832–1834). Prior to this period, the number of MPs with noble titles consistently outnumbered those without, as reflected in the data. However, the passage of the Reform Act of 1832 marked a turning point in British political history. This act significantly weakened the aristocracy's stronghold over Parliament by redistributing parliamentary seats, granting greater representation to industrial cities that had emerged during the First Industrial Revolution, such as Manchester and Liverpool.



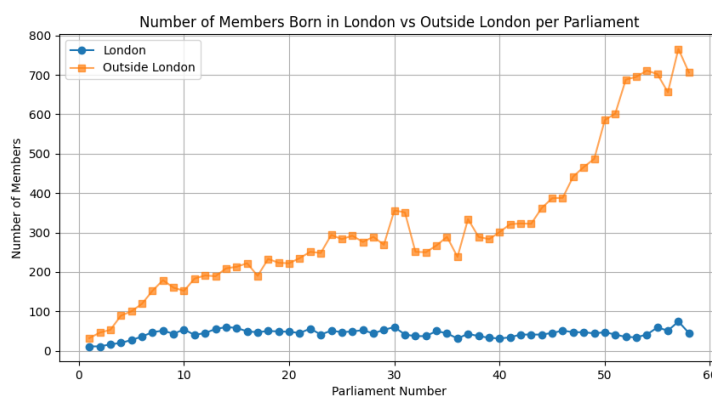
Heat Map comparison between the 1-3 Parliament(1802-1806) and 13-14 Parliament(1838-1842)  
MPs' birthplace

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The impact of these changes is evident when comparing the distribution of MPs' birthplaces before and after this period. In earlier parliamentary stages, MPs were predominantly born in rural areas. However, following the Reform Act of 1832 and the economic transformations brought about by industrialisation (particularly around 1840), a noticeable concentration of MPs' birthplaces emerges in newly developed industrial cities, particularly in the Midlands and the South of England. This transition reflects the broader socio-economic shift from a landowning aristocracy to an increasingly urban and industrial political landscape.

### London Centralised

According to the line graph, from the establishment of the British Parliament to the present day, London has consistently remained a

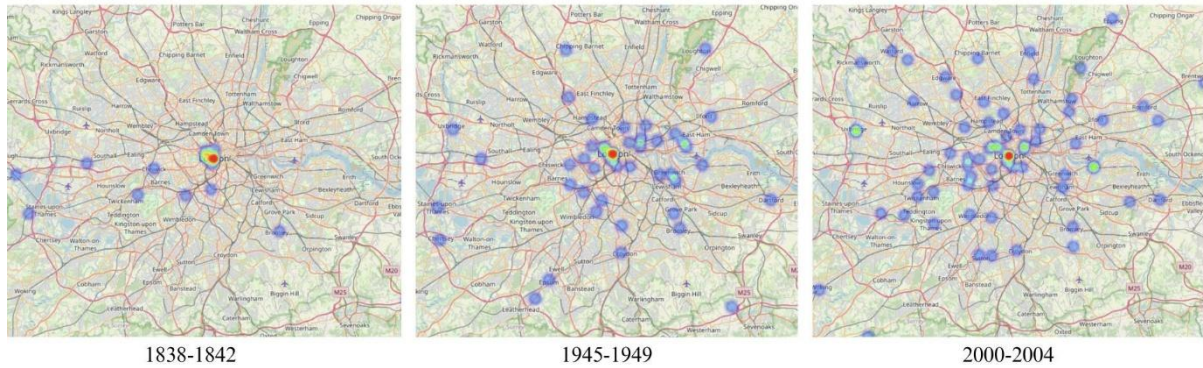


significant birthplace for MPs. The number of MPs born in London has remained relatively stable, fluctuating between 40 and 60 MPs per parliament. Over the entire history of Parliament, 2,518 MPs have been born in London, accounting for approximately 12% of all MPs in the past 222 years. If MPs born in the Greater London area are included, this number is likely even higher. This trend underscores London's enduring role as the political, social, and economic centre of the United Kingdom.

Following the Second World War, several socio-economic factors contributed to an increase in MPs being born in or around London. The widespread destruction caused by the war, post-war reconstruction efforts, and the rise of the working class between 1900 and the

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1960s led to significant population growth in the Greater London region. As a result, a larger population required parliamentary representation, leading to an increase in MPs from this area.



Heat Map comparison in near-London Area among three periods

Additionally, as the nation's capital, London has historically offered superior educational opportunities, which may have contributed to a higher number of MPs being born in or near the city. Access to elite institutions and political networks likely increased the likelihood of individuals from London entering politics and being elected to Parliament.

## More diverse background

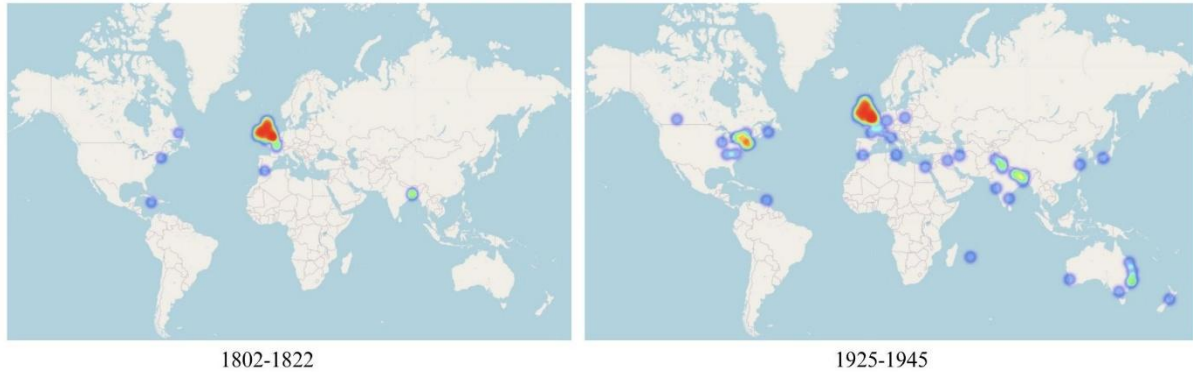
Between the 16th and 17th centuries, Britain began its colonial expansion for a variety of reasons, including religious, military, and economic motives. Following the First Industrial Revolution, the United Kingdom gained the capacity to export surplus goods overseas, further strengthening its global influence. As a result, British colonisation reached its peak between 1919 and 1939, expanding the empire's reach and fostering stronger political and economic ties with its colonies.

This expansion had a direct impact on the composition of the British Parliament, providing opportunities for individuals born in overseas territories to become involved in British politics. In the following decades, the number of MPs born outside the UK gradually increased. According to the heatmap illustrating MPs' birthplaces between 1925 and 1945, in



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addition to those born in European countries, a significant number of MPs originated from India, Canada, and Australia—the key territories under British rule during the colonial period.



Heat map comparison in different background of MPs

Beyond the influence of colonisation, advancements in transportation and communication also played a crucial role in shaping this trend. Compared to the pre-industrial era, technological progress in transportation made it significantly easier for individuals to travel and settle in different parts of the world. Consequently, pursuing a political career in the UK, even for those born abroad, became more feasible and accessible over time.

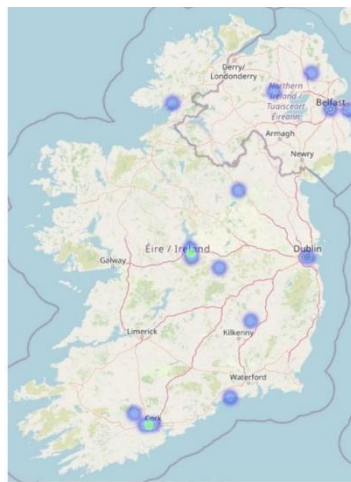
### **Ireland's Union and independence**

Ireland formally joined the United Kingdom under the Act of Union in 1801, integrating Irish representation into the British Parliament. For over a century, Irish MPs played a crucial role in parliamentary politics, with political parties such as the Irish Conservative Party and the Irish Parliamentary Party maintaining a consistent presence. This is evident in the heatmap, where MPs born in Ireland formed a noticeable cluster.

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1900-1920



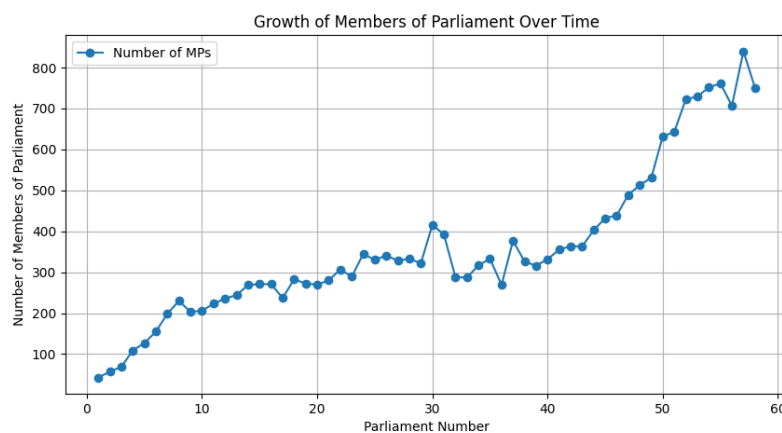
1925-1945

Heat Map comparison between Ireland before and after gained independence

However, following Ireland's independence in 1922, the political landscape shifted dramatically. With the establishment of the Irish Free State, Irish MPs were no longer part of the British Parliament. This resulted in a

significant reduction in MPs from Ireland, which is clearly reflected in the heatmap as many Irish-born MPs disappeared from the dataset. This transition marked a pivotal moment in British parliamentary history, reshaping the geographical and political composition of the UK Parliament.

## The Growth of MPs



As shown in the line graph, the number of MPs in the British Parliament has been growing since its establishment. This growth has been driven by multiple factors. The Union with Scotland and Ireland led to an increase in parliamentary seats. Although the independence of

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Ireland resulted in a temporary decrease in MPs, the overall trend remained one of steady growth.

Additionally, various Reform Acts expanded voting rights, allowing more citizens to participate in elections, which in turn led to an increase in parliamentary representation. Furthermore, post-World War II population growth resulted in a larger electorate, necessitating more parliamentary seats to ensure fair representation. These factors collectively contributed to the continued rise in the number of MPs over time.

## Critique

The analysis presented above demonstrates several significant findings derived from the data models. However, there are notable limitations in the models used in this assignment, which restrict the depth of analysis that can be conducted.

One of the primary limitations is the model's inability to consistently identify the geographical regions of MPs' birthplaces. This issue arises from inconsistencies in Wikidata's geographical naming conventions. For example, some birthplaces are listed as "West of London", while others are broadly labelled as "England" or even "United Kingdom". Due to this lack of uniformity, it is difficult to categorise MPs' birthplaces into standardised regional divisions. Additionally, the models lack geographical processing techniques that could extract and standardise regional data, making it challenging to conduct region-based comparisons of MPs' birthplaces.

Another significant limitation is the inability to correlate MPs' birthplaces with their political affiliations. Political parties are a crucial aspect of parliamentary politics, influencing policy-making and representation. Without this association, the models cannot determine whether MPs from particular regions are more likely to support specific political parties. This gap prevents the analysis from identifying potential regional political trends,

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such as whether MPs born in certain areas are more likely to belong to specific ideological or party alignments.

The model is also unable to capture historical changes in parliamentary constituencies and electorate sizes. Throughout British parliamentary history, electoral boundary changes have often reflected population growth in specific areas, necessitating the allocation of additional MPs to represent them. Being able to track past electorate changes could provide deeper insights into shifts in social structure and how these changes relate to the evolving distribution of MPs' birthplaces. Without this capability, the model lacks a crucial dimension in explaining why MPs' birthplaces have shifted over time.

A further limitation is that the model can only analyse the existing dataset rather than dynamically querying Wikidata for additional information. Since it does not fetch new data beyond the dataset provided, its ability to discover new insights is constrained by the dataset's completeness and scope. This limitation inherently restricts the range of discoveries that can be made regarding MPs' birthplaces. A more advanced approach, integrating real-time querying of Wikidata, would allow for a broader and more flexible analysis.

While the current models provide a few insights into trends in MPs' birthplaces, their limitations hinder deeper analysis in several key areas. Addressing these shortcomings—such as improving geographical standardisation, incorporating political party affiliations, tracking electoral boundary changes, and enabling dynamic data retrieval—would significantly enhance the analytical power of the study.

Apart from that, it is important to notice that birthplace alone provided a unique perspective. However, many external factors influence an individual's path to Parliament, such as education, career opportunities, social mobility, and political networks. For example, an MP may be born in one location, receive education in another, and eventually represent an electoral district to which they have no direct personal connection. The place of birth does not

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necessarily determine where an MP will serve, as political careers are often shaped by broader socio-economic and institutional influences.

If additional factors—such as education history, career background, and constituency connections—were incorporated into the analysis, it could reveal a wider range of insights into the patterns of parliamentary representation. A more comprehensive approach would provide a deeper understanding of how MPs rise to political office and the extent to which geographical background influences their political careers.

## Conclusion

This assignment examined the birthplaces of Members of the British Parliament over the past 200 years, revealing several key transformations in the political and social landscape of the UK. The analysis highlighted: The shift in parliamentary power from the nobility to ordinary citizens, reflecting broader democratic developments. The transition from rural to urban representation, driven by the Industrial Revolution and post-World War II societal changes. Structural changes in Parliament following the independence of former territories, like Ireland in 1922. And the increasing diversity in MPs' backgrounds, as the UK became more globally influential. Apart from that, the growing population's impact on electoral representation, leading to an increasing number of MPs to safeguard citizens' interests.

Although the analysis provided valuable insights, the methods used contain several limitations, and there may be additional relationships yet to be discovered. Future improvements in data collection, regional classification, and integration of political party affiliations could further enhance the depth of this research, and the research should considered include broader elements.

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