

Employing a comprehensive cosine similarity analysis, this paper examines the voting patterns of Bundestag Members of Parliament (MPs) across four legislature periods in German political history. The focus is on Cabinet I under Willy Brandt (SPD & FDP), Cabinet II under Helmut Kohl (CDU & FDP), Cabinet I and IV under Angela Merkel (CDU & SPD), with the primary aim of unraveling the intricate dynamics of political alliances. The methodology involves calculating the cosine similarity for each pair of MPs based on their common votes and the overarching hypothesis posits that shifts in government coalition significantly shape cooperation and opposition patterns among MPs. To enhance the efficiency of the analysis and capture the essence of MPs' voting behaviors, the dataset has been condensed to the first and last three months of each legislative period. This focused approach efficiently distills the core dynamics while mitigating complexity. Concentrating on the initial and concluding phases, characterized by significant policy debates and legislative decisions, ensures a representative outcome in the analysis. This focused examination allows the identification of nuanced shifts and alignments in voting patterns, contributing to a comprehensive understanding of the broader legislative periods. The findings underscore the nuanced interplay between political alliances and policy alignment, providing valuable insights into the fluid nature of political alliances within the German Bundestag. Notably, the analysis illuminates a compelling example: members of the Free Democratic Party (FDP) exhibited heightened voting similarity with the Christian Democratic Union (CDU) when both parties are part of the same government coalition. This observation serves to reinforce the central hypothesis, indicating that shifts in government coalition indeed have a substantial impact on the cooperation and divergence patterns among Members of Parliament (MPs). The comprehensive cosine similarity analysis applied to the voting patterns of Bundestag MPs over the specified historical periods supports the contention that political alliances intricately shape their collaborative dynamics. By delving into specific Cabinets led by key figures such as Willy Brandt, Helmut Kohl and Angela Merkel, this paper not only highlights the broad evolution of political alliances but also sheds light on the temporal dynamics within each legislative period. In conclusion, this paper offers a valuable exploration of the interplay between political alliances and voting patterns in the German Bundestag, providing insights that deepen our comprehension of the fluid nature of political dynamics. The observed patterns not only validate the initial hypothesis but also present a compelling narrative of how shifts in government coalitions shape the collaborative landscape among MPs over different legislative periods in German political history.