JYLR Open

The Correlational Relationship Between the Election Cycle and Measures of Legislative and Executive Production in the U.S.

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To cite: Lowry, A. (2025). The Correlational Relationship Between the Election Cycle and Measures of Legislative and Executive Production in the U.S. *International Journal of Youth-Led Research*, *5*(1). http://doi.org/10.56299/rst678

Received June 23, 2025
Accepted July 21, 2025

ABSTRACT

Objectives This study aims to correlate and quantify the relationship between the election cycle and the implementation of legislative action as a function of democracy.

Methods This study employed a mixed-method approach. Quantitative data were sourced from nine datasets made available by the U.S. federal government and nonpartisan organizations, while a retrospective interview with a current member of the New York State Assembly provided qualitative data. For the quantitative analysis, we used a waterfall method and R programming language. A discourse analysis methodology was employed to analyze qualitative interview data.

Results The data analysis reveals an overall correlation between legislative election cycle and bill production. While bill production peaks in Year 3 of the cycle, Year 4 sees a significant drop, aligning with the executive election cycle.

Conclusion While there is the need for further research to prove causality and considers how political polarization and other factors, the overall findings suggest potential strategies to improve the legislative process in future election cycles.

Keywords *Sustainable Development Goals (SDGs), strong institutions, democracy, election cycle, legislative action*

Highlights

- This is a youth-led original study. Youth researchers took all initiatives and made all decisions throughout the research process.
- This study challenges political scientists to take a big-picture look at one of the world' most influential, yet deeply flawed democracies: the U.S. political system. Are extended campaign and slow legislative action indeed unavoidable?
- With a strong emphasis on data and critical analysis, this study highlights Gen Z's determination to engage in politics: thoughtfully, strategically, and on their own terms.

Published by JYLR. Youth Research Vox, Los Angeles, CA, U.S.

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INTRODUCTION

On July 22nd, 2024, then-President Joe Biden announced that he would be stepping out of the presidential race. Following these events, Kamala Harris took his place as the Democratic Party nominee, with less than four months until Election Day. While this sent shockwaves through the American public, it also displayed a unique and longstanding aspect of the American election cycle: an uncharacteristically long campaign period. In many countries, such as India and South Korea, presidential bids are curtailed to 3 months or less, unlike the United States, where campaign ads can begin airing at any time and often start more than a year before Election Day, with an average of 384 days for presidential bids (Scofield, 2021). The practice and normalization of prolonged campaign cycles have both social and monetary implications, ranging from the integration of campaign advertising to the polarization that surrounds the majority of the election cycle. However, the effects do not end there. One aspect of a longer campaign cycle that is seldom discussed in political science is how the election cycle model used in the United States impacts legislative action, including both the bills voted on and the bills enacted in Congress. This is particularly significant because legislative action likely has the most

profound implications for the American people compared to the other factors mentioned, as evidenced by the high rates at which American citizens report being affected by a lack of action from their legislators (Dynes, 2021). This leads to the question: How are the quantities of bills voted on, bills enacted, and executive orders signed impacted by the current year or stage of the election cycle, if at all?

In terms of this inquiry, "legislative action" is defined by bills introduced to the legislative branch for voting, bills enacted by the legislative branch, and executive orders issued by the president. The executive election cycle is defined as a four-year cycle beginning at year one (Y1), when a new president enters office or a sitting president begins their second term. The legislative cycle is defined as a two-year cycle following congressional sessions, beginning at Y1, the start of a new Congress. The present research is the first step in correlating and quantifying the relationship between the United States' unique election system and its legislative action, aiming to discover the impact that the year of the election cycle has on three factors: legislation voted on, legislation enacted, and executive orders signed.

LITERATURE REVIEW

Election's Impact on Voters

The campaign cycle is crucial to democracy due to its significant impact on election outcomes and voter behavior. Gotlieb et al. (2015) found that the widespread use of campaign advertising for a candidate harmed how the general public viewed that candidate for up to five years after the ad aired. For example, ads viewed as "unfavorable" or "overplayed" by voters directly correlated with voters losing interest in a candidate, resulting in fewer votes for the representative. Wlezien and Erikson (2001) found that the day-to-day operations of campaigns, rather than the big-ticket moments such as debates and rallies, had the most impact on voters' views. When examined collectively, these sources indicate that the campaign cycle constitutes a continuous, carefully managed process overseen by campaign staff across the country, one that has been shown to influence electoral outcomes. The election's near-annual procedures are just one example of how the election cycle creates inefficiency through the misguided focus of elected officials, leading to negative long-term biases that can affect the lives of voters, including issues such as overcorrection and personal polarization. In essence, these studies demonstrate that while voters want their elected officials to "get things done," that is, they want them to introduce, vote on, and pass significant new legislation in regular intervals (Del Monte & Kotanidis, 2023), and that aspects of the campaign cycle, such as advertising, public speaking, and developing campaign strategies, can detract from the time and effort officials put into designing and implementing legislative action.

Legislative Actions Impact on Citizens

Aside from the social implications of the American election cycle, its effect on legislation has produced the most significant consequences for the American people. Boehmke (2005) found that although policy-minded citizens experience the most prominent emotional effects of legislation, which reduces their desire to become involved in political campaigns and outcomes, most citizens reported feeling directly affected by federal action. Ávila (2015) found that even citizens who felt that federal legislation affected them directly in at least "some cases" thought that these legislative bodies did not move fast enough to implement new laws. This phenomenon led to widespread dissatisfaction with the legislative process, a disconnect, and tension between representatives and constituents, and exemplified a lack of synergy in the democratic aspect of the legislative process.

These findings have been documented in political systems worldwide, across various sizes and functions, as evidenced by studies such as Ireri (2024) and Moser (1999). Although all have come to similar conclusions, when considering studies based in the United States, the correlations between campaign institutionalization and representation, as well as the frequency of public policy, became even more pronounced. Dumas (2017) concluded that these effects stemmed from the indirect democracy element of American elections, which is somewhat unique to the United States.

Campaign and Expenditure Strategies in Elections

Clayton (2014) discussed campaign strategy and how it impacts election processes, outlining a step-by-step process for engaging stakeholders (voters) in a campaign that resembled those of many politicians. First, stakeholders had to be identified, often by sorting or ranking by importance, including swing voters and minority groups. Then, their viewpoints had to be analyzed, and campaign plans were made accordingly. During this stage, campaign management had to conduct surveys frequently, and politicians or staff members talked with the general public to understand

the issues that were important to them. Next, politicians acted on these observations, often speaking on talk shows or attending political events that corresponded with voters' concerns. Finally, another round of data collection, generally through randomized opinion or professional outlook polls, proved if the strategy worked. If it was successful, the candidate gained a favorable position in the election. Gurian & Haynes (1993) observed executive branch elections more specifically. Within a longitudinal content analysis, Gurian analyzed the 1976 and 1980 presidential elections and found that targeting specific voter groups and incorporating higher levels of data analysis during the campaign process increased candidate success rates. Gurian's paper also highlighted the inequity these campaign management techniques could cause, as high-level analysis and targeted campaigns were typically only associated with expensive presidential bids rather than grassroots projects. These studies help demonstrate a campaign's strategy and essential design, corroborate the importance of resources, and provide an in-depth understanding of stakeholders in structuring a successful campaign.

International Election Models

Though this research focuses on the United States election models discussed above, it was crucial to analyze these systems to understand why other developed countries avoid the unique issues studied in the current inquiry. Reif & Schmitt (1980) analyzed election processes across Europe, aiming to identify patterns and strategies for examining European election results. The first factor that stood out about these models was the number of parties involved in European elections, with four parties receiving more than 10% of votes and four more receiving more than 3%. These figures seemed insignificant at first, but the difference became apparent compared to U.S. data. In 2020, only two parties received more than 2% of votes, and only one candidate from another party received more than 1% (Ferguson, et al., 2021). The differences in election systems became ever more apparent as Reif & Schmitt (1980) discussed involvement in local politics and how these two factors created a more diverse election landscape. Though the study focused on European elections, there were countless other democratic countries with vastly different election methods. With this precedent set, it was clear that any election system that did not perform favorably had alternative selection methods. These models varied from using a two-round system to ensure the winning candidate had an absolute majority (France) to ranked-choice voting, where voters selected their top 2 to 5 preferred candidates (Ireland) (Lachat & Laslier, 2024). These principles were essential to understanding the construction of electoral systems and provided vital context when examining the electoral process in the United States.

Formulaic Analysis in Political Science

In the field of formulaic analysis, two chronological models are used: predictive models and postdictive models. Predictive models, the focus of this inquiry, use historical data to predict future events through the use of a formula. This type of analysis relies on consistent relationships between variables, which lends the model to the field of political science. Rogers (2017) applied this approach using the BeSiVa (best subset in validation) algorithm to provide more certainty to the often theoretical field of political science. Rogers used predictive analytics to test political science theories through the algorithmic separation of data. Goldstone et al. (2010) distinguished countries that experienced instability from those that were stable with over 80% accuracy. This inquiry further validated the method through several retrospective analyses, which consistently maintained the high accuracy rate of the formula throughout the decade. These studies emerged at the forefront of a new era in political science, during which the limitations of descriptive research methodologies were increasingly noted, leading to calls for improved methods in the field (Taagepera, 2008). These studies laid the groundwork for the exploration of data science in social policy and provided a crucial foundation for the validity of these methods as they are used today.

RESEARCH GAP

The current study aims to address a theoretical gap in political science. Due to the lack of standardized metrics to measure legislative action, no research has been conducted on how the election process impacts legislative action. For example, though Del Monte (2023) studied campaign length and elected officials' actions, they failed to address legislation specifically and how this was impacted by the changes in action by elected officials, which Del Monte measured using several separate metrics, including public appearance and voting tendencies. Though the datasets used within the indicated research were preexisting, they had never been analyzed in such a way as to provide a clear

The present research will also attempt to fill the knowledge gap that precedes the theoretical gap in legislative action as an interconnected component of democratic processes rather than a standalone metric, exemplified by Boehmke (2005), which only examined the legislative branch components of the legislative system. This is crucial to the field of political science due to the lack of predictive tools for legislative action, which could revolutionize the availability and accuracy of quantitative data in campaign management and bill introduction. Improvements in these fields have the potential to drastically reduce the often lengthy periods that bills spend waiting to be formally introduced or discussed on the floor at a federal level..

METHODS

The current study was conducted through comprehensive mixed-method research composed of two main parts. A mixed method was chosen to maximize quantitative data output due to the many pertinent factors. A focus on graphically and formulaically understanding the variable relationships furthered the amount of data output. Additionally, a more complex method allowed for the statistical validity needed to create a baseline-type study. The data analysis portion also allowed for a more complete analysis of the complex legislative systems and timelines in the United States. Part I comprised a diagnostic waterfall data analysis. A waterfall analysis involves visualizing how data points change over time by using a sequence of years or events to show an alteration in the original variable(s). This information is often presented in a hierarchical chart or a waterfall graph. This type of analysis was chosen due to the reliance on years and change over time to reach conclusions within this research, which made it a superior choice to an agile method because of the direct relationships between variables and the one-to-one input-to-output ratio with the variables studied. A diagnostic waterfall model was utilized in order to align with the goal of correlating historical data with potential future ramifications within the formulaic analysis portion of the analysis. This inquiry included nine independent data sets made public by the 1966 Freedom of Information Act and its respective improvement act in 2016. Data sourced directly from the federal government was used whenever possible to maximize the source validity of the data. Any data that was not sourced directly from the federal government was sourced from organizations that employed a nonpartisan approach to data reporting, and all sources contained 50 years of data on their topic to ensure comprehensive data coverage. The data is also cleaned both before and after formatting to prevent data duplication and manage data quality, and relevant legislation, such as the Freedom of Information Act, was consulted to ensure that censorship would not bias the results of the inquiry. The subsumed data sets included data regarding the number of federal laws enacted per year and by type, U.S. election cycle data, including years of elections and significant changes in Senate or House composition, and data relating to extenuating circumstances such as war, political tensions, and pandemics that could affect legislative processes.

To account for the circumstances discussed above, confounding variable codes were created at the beginning of the analysis, and years that contained events within those codes were omitted from the analysis, including pandemics and widespread instances of domestic terrorism. This practice was consistent with the procedures outlined by Sang Kyu Kwak et al. (2017) and is informed by the codes presented in Aguinis et al. (2013). While this decreased the overall sample size, it was implemented to maintain the unbiased nature of the data, as significant political and social events have been proven to impact legislation rates throughout the world. This aided in providing a more complete, standardized picture of legislation in the United States. Additionally, to further this goal, functions of the executive branch such as executive orders were included to gain a more exhaustive picture of how different branches of government were impacted by the election cycle, as well as to account for how executive orders could interpret and implement standards or requirements for the legislative branch to take action. Full versions of all datasets can be found in Appendices 1 and 3.

Along with the rationale stated above, datasets were also selected based on the depth of data available and range of data. For example, datasets with 20-year windows were excluded in favor of datasets with 200-year windows. Dataset bias was also considered, with only nonpartisan organizations' data or federal data being used. Datasets were also omitted if they had missing or incomplete values, and datasets that included only the variable to be studied, such as executive order only datasets, were preferred over comprehensive datasets that contained data points that did not apply to this research. Additionally, one dataset was compiled based on a data library from the federal government and reformatted before analysis. While this was deemed necessary for the purpose of

comprehensive data, this allowed for the possibility of human error, which was remedied through a triple-reformatting system to ensure that errors were removed before the datasets were combined and overall data cleaning began. Datasets were cleaned and limited to the chosen time frame before the analysis commenced.

The dataset cleaning process had four main components. First, we flagged and addressed missing values. These missing values were all due to formatting problems during the importing process. Next, we removed duplicate data. Then, we increased formatting consistency. This included adding election cycle years if they were not already present. It also involved ensuring uniformity in abbreviations. Finally, we checked the years for consistency using a linear model. This was done to ensure the reliability of the waterfall method.

A complete list of years analyzed concerning extenuating circumstances and lack of data can be found in Appendix 1. These years were then grouped into one of four election cycle years (numbered 1-4) for analytical purposes. The program R was used to interpret datasets. Google Sheets was used to merge datasets before importation into R. R is a coding program with a unique coding language (commonly known as S) that was developed for statistical computing and data visualization. The program provided comprehensive statistical analysis and had a wide array of data cleaning features that made it an ideal approach for this type of research. Its algorithm and coding language were based on the schematics program Scheme. This program was chosen due to its widespread application in political fields (Pollock & Edwards, 2022) and its internal flexibility and open-source model, which allowed for foundational research similar to this study to base its methodology on previous works and models, despite the differences in the inquiry type. Within the R program, an algorithm was designed to clean data in order to correlate legislative action with election years; the algorithm was based on the R language's base programming methodology, utilizing a waterfall technique. The entire algorithm can be found in Appendix 2, with combined datasets also available in Appendix 3. In total, 43 years had sufficient data for analysis, and 14% were excluded due to extenuating circumstances based on the pre-screening criteria for political science. For these reasons, the data analysis was refined to include only 1970-2020, largely due to insufficient data regarding bill introduction prior to 1970.

In order to use a data analysis involving these variables, several assumptions were set to ensure modeling transparency and provide groundwork for this inquiry. The most central assumption within this model was the assumption of independent observations, meaning that it was assumed that each piece of legislation counted is statistically independent from the others. For the purposes of the formulaic analysis, it was also assumed that there is not a perfect correlation between the independent (election years) and dependent (executive orders, legislation introduced and voted on) variables within the data sets. The formulaic analysis also assumed some level of context-based stability, in which the relationships between the variables would not shift dramatically over time. This was based on the historical evidence that shows that shifts within these relationships had been relatively minor over the past 50 years. Finally, it was assumed that the model included all relevant variables and only excluded irrelevant variables. The value of this assumption was maximized through the use of confounding variables at the inception of the research. These assumptions allowed for the data analysis process to draw workable conclusions that have maximal value for further research. Their logistical validity, however, was something that needed to be considered when reviewing the results of this study.

Part II of this study was used to corroborate correlations found in Part I, as well as to identify additional confounding variables. The interview section was used only in an anecdotal manner and did not alter the data presented in any way. The responses from this interview were analyzed using a discourse analysis methodology, in which responses were put into the larger conversation that they applied to, in this case the current political and legislative climate, in order to gain insight into the correlations found within Part I. Part II comprised a retrospective digital interview with a politician who currently holds office within the New York State Assembly and has experience with federal legislation. The interview was composed of a series of questions (Appendix 4) regarding election cycle classification, defined as how elected officials view election timelines, election year productivity, and balancing campaign and public office duties. An ideal candidate was found through interview outreach (via email), which favored no region of New York State. The respondent's name and specific title will be kept confidential to ensure anonymity. The participant signed an Ethical Research Consent Form (Appendix 5) before being interviewed and was informed that participation was voluntary in the initial contact email (Appendix 6). During initial contact, the participant was also given access to the Research

Project Proposal (Appendix 7). The interview was conducted in January of 2025. Notes were taken according to the organizer found in Appendix 4. This allowed the focus to remain structured, precisely balancing office and campaign duties. While the single interview did not allow for an ideal level of certainty and bias prevention, it was still incorporated due to the importance of a mixed method including qualitative data points in the field of political science research. It was recommended that further research employ a greater number of interviews, ideally five or more interviewees.

RESULTS

Executive Results

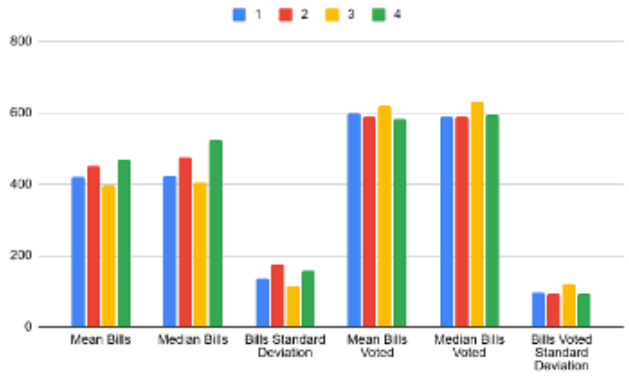
Within the 43 years analyzed, the average number of bills introduced varied considerably across the executive elective spectrum. Graph 1 depicts the mean, median, and standard deviation across the years analyzed. Analysis of this graph revealed that the mean number of bills enacted increases, decreases, and increases exponentially throughout a four-year presidential term. Due to this relationship, a correlation can be noted, but a correlation coefficient could not be determined. Inversely, the mean number of bills voted on decreased, increased, and decreased again. This phenomenon could be explained by multi-year legislative action, a viewpoint which is expanded upon by interview responses. If more bills were introduced in year h, more will likely be enacted in h+1, as described by interviewees, within a negative proportion to account for bill failure. This idea is also represented by Formula 1, which is an estimation tool for the number of bills that will be enacted in a given year y based on x, which represents the executive year number (1, 2, 3 or 4) z, which shows the number of executive transfers of power in that year, and k, which represents the number of bills voted on in the previous year. This equation has a percent error of 1.4% when tested across representative medians of the existing data (Appendix 8). These medians do not include years in which k is more significant than y, where the percent error is 19.4%. Within the existing data, three such years occurred. The reasoning for this is the variance in bill enactment timelines on a legislative level. For example, a bill that was introduced and passed in 2023 may be enacted in 2024 or 2025, depending on the regulatory or political implications of its contents. This was found to be the reasoning for the k > y evaluation in all three cases.

$$\frac{z+10x^3-120x^2+360x+k}{2227} \times 1000$$

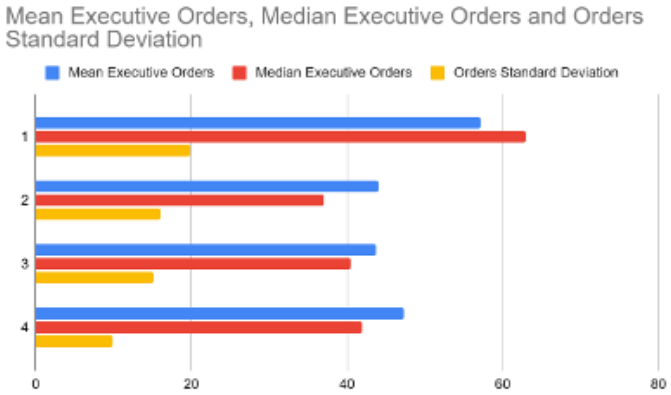
Formula 1

As seen in Graph 1, executive orders see the steepest drop from Y1 to Y2, with the mean dropping 23.05% in Y2. From Y2 to Y3, the mean again decreased by 0.75%. From Y3 to Y4, executive orders saw the only rise across the executive cycle, increasing by 7.81% to a mean of 47.36 executive orders per year. The standard deviation constantly decreased throughout the cycle, from 19.9 (Y1) to 9.9 (Y4). This was dissimilar to the standard deviations of bills enacted and voted on, which both saw Y3 as an outlier in standard deviation trends. It was noted that all data had an approximately normal distribution.

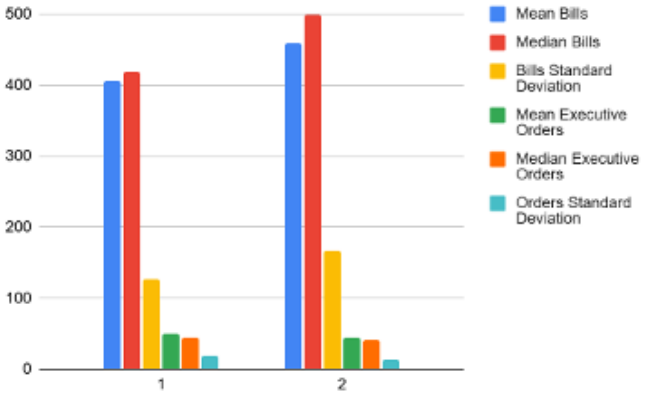
Y3 trends go beyond standard deviations, as Graph 1 shows that Y3 had the lowest median bills enacted and the highest median bills voted on. The bills voted also had an uncharacteristically high standard deviation between 93.3 and 95.5 for Y1, Y2, and Y4, while jumping to 121.29 for Y3 (see below). Standard outlier analysis was performed to determine if outliers were present; however, no outliers of statistical significance (± 5%) were found. Within these calculations, a margin of error of 0.06% was established.



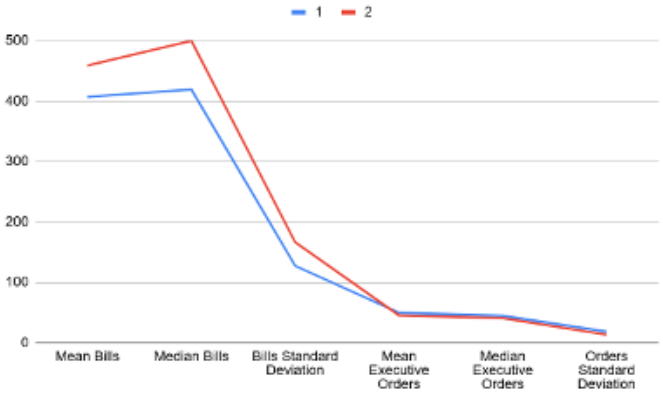
Graph 1 (Numerical Breakdown in Appendix 10)



Graph 2 (Displayed in Executive Year Intervals)



Graph 3 (Numerical Breakdown in Appendix 11)



Graph 4

$$\sqrt{-74.6117x - 5.1667z + 10790.3581}^{1.8}$$

Formula 2

Graph 2 depicts the executive deviation data throughout the executive cycle. This allows for a more concise view of the changes in the quantities of executive orders throughout the cycle. In Y1, average and median executive orders both have strong peaks, with a mean = 57.182 and a median = 63. The mean decreases 23.05% to Y2 and another 0.757% to Y3; meanwhile, the standard deviations maintain consistency relative to the mean totals, showing deviation validity. In contrast with this trend, mean executive order totals rise 8.466% from Y3 to Y4, accounting for a total decrease of 17.17% across the executive cycle. This is also a convoluted comparison between Graph 1, in which a macrocosm of these relationships, in combination with the other variables analyzed, can be viewed

Legislative Results

Graph 3 correlates legislative cycles with executive orders and enacted bills. Due to data configuration, bills voted on were omitted from this graph to maximize legibility. Y2 was noted to have a positive correlation with bills enacted and a negative correlation with executive orders. The correlation (r) between year and bills enacted is $r \approx 0.933$. This was determined utilizing the Pearson Correlation Coefficient, an indicator measuring the strength of linear relationships. This was utilized due to approximately normal, linear data distribution. This coefficient formula also maximized the correlations that could be drawn across the variable groups. The correlation between Y and executive orders is $r \approx 0.664$. This can be seen in the decline in executive orders across the two-year cycle. The standard deviations for these figures were within 3% of the standard deviation of the bills enacted (bills) and 6% of the executive orders, compared to the standard deviations from the executive cycle data sets (seen in Graph 2). This correlates with perspectives from the second portion of the study, as it was noted in an interview that an indirect correlation often exists between branches of government, especially when they are working on a common issue, such as specific pieces of legislation.

Graph 4 depicts how the number of bills enacted and executive orders signed are altered between Y1 and Y2 of the legislative cycle for the same dataset. The most significant shift between years is the number of bills enacted, similar to the executive order findings (Appendix 11). A 12.74% increase was noted between Y1 and Y2 (Appendix 12). A formula for this relationship can also be calculated. In Formula 2, which solves for y, the number of bills enacted in a given year, x equals the legislative year, and z equals the year, it was noted that bills enacted and time since 2000 have an inverse relationship. Formula 2 was developed using complete representation due to a non-regressive relationship, meaning that this formula is non-linear in nature. It has a margin of error of 0.56% and a percent error of 4.83% on representative non-outlying inputs, which were historical years in which no confounding variables were present.

DISCUSSION

This study provides a baseline of proficiency for the relationship between the election cycle and legislative action. The overall correlation is that bill production increases across the legislative election cycle and resets with the start of a new legislative cycle. However, bill production does drop off significantly from Y3 to Y4, indicating some correlation with the executive election cycle. Additionally, the correlation was furthered when considering the entire 4 year executive election cycle, in which Y3 was a climax for legislative action, and Y1 is a climax for executive orders. This aligns with prior research attributing election cycles to fluctuating rates of legislative action in the United States, as demonstrated by Stern (1951). It is also essential to note that the relationships noted are purely correlational, and further research is needed to prove a causation within this relationship, if a causation exists between the factors analyzed.

Since the two cycles are interconnected, it is essential to consider the executive and legislative factors simultaneously. For example, the two-year cycle within the executive cycle can be explained by the constant relationship in legislative data points. Changes in executive orders in Y3 can also show that the executive branch picked up the margins of legislative duties during the branch's electoral heyday. This aligns with the political theory of political gridlock, which states that when Congress fails to act in a timely manner, it makes the president more likely to step in through executive orders. A similar, yet less pronounced, correlation exists in executive Y4s. The interviewee's responses corroborate this idea, stating that working on legislative projects is “exhausting” in the middle of an election cycle. This can especially impact large bills that would have the most significant effects on the day-to-day lives of the American people. According to Lindblom’s (1979) theory of incrementalism, elected officials, due to time constraints, tend to prefer making small changes rather than enacting large-scale, complex reforms. Such a balance of power and resources at the federal level may alleviate some of these concerns in some elected officials' job areas, assuming the branches' legislative priorities are aligned.

In addition to the conclusions drawn by the data, it is crucial to note that the data analyzed, especially if it is causational rather than correlational, though this type of relationship has not been proven in this inquiry, impacts American citizens in ways beyond the statistics displayed in the present study. This study hoped to engage a new tool for modeling elections and understanding how legislative action is impacted by external variables, which may allow future researchers to develop innovative solutions allowing for the rates of legislation needed to maintain a functional democracy. In the short term, the formulas were developed, if validated by further research, could be used as a tool for lawmakers to strategize when to introduce important bills to maximize potential floor time and discussion around significant issues, as well as serving as inspiration for future legislation that could refine the process to remove these conflicts.

The results show a significant correlation between legislative and executive elections and legislative action. Therefore, the legislative data utilized further provides evidence of the election cycle's impact on democracy’s productivity combined with executive orders. The formulas calculated represent a level of predictive validity within the data analyzed, though further research is needed to ensure their validity. They also represent a potential shift towards increased legislative action and usage of executive orders in the modern era (post-1970). Additionally, the relative proximity of the data means and medians shows a high level of data cleaning, represented by a lack of outliers and variations in the data, and standard data distribution.

While the current inquiry is based on an emerging field of study, other coding models can be employed to provide a methodological comparison.

Although this study utilized a waterfall programming method, defined as a traditional coding approach that utilizes a linear pattern and chronology with constant task separation, an agile, or linear, micro-scale focused, methodology was also considered. McLean (1996) and other experts in political science used an agile method; however, an agile framework was not used in this inquiry due to the relationship between the variables and years due to the fact that a one-to-one relationship that landed itself naturally to a linear relationship analysis, as well as the chronological nature of the data. Scrum, a variant of agile, was not utilized due to its focus on a multiple-coder framework that was not available for the present inquiry, as well as non-chronological nature and the fact that it is an unprecedented method within the field of social issues in data science. Differing coding techniques and languages may be used in future research to corroborate the results found in this inquiry.

Due to limited data availability, data for this analysis was synthesized from several diverse sources. While these sources provide a comprehensive picture of government activities, the variety between them could also negatively impact the representative reliability of the data analyzed. Additionally, freedom of information may create gaps in the record that could affect these figures, though the current regulations were reviewed and ensured no large variances in the data sets. This study has attempted to fill a knowledge gap in the field of political science, and therefore, there is a lack of congruent studies that can be used for comparison. More research is needed to further demonstrate correlational validity within the figures constructed, as well as to begin to prove a causation between the variables analyzed. Additional studies could also be used to create a standard of analysis within United States government data analyses. Though base code was used to synthesize resources in this study, a more streamlined approach could be advantageous to identify additional confounds and further clean the data while considering additional confounding variables, including political climate and political party majorities. The present research could be used as a tool to drive these approaches forward and to explore new methods of analyzing the legislative data available.

Data availability also affected the measures analyzed within the study. Although seven distinct factors were investigated in the present study, outside influences such as political parties in authority and international relations could influence the rates at which democracy functions. More longitudinal studies with additional factors analyzed are needed to prove further and understand these correlations, specifically those relating to confounding variables, gubernatorial and state government functions, and economic insecurity. This study could act as a basis by which to construct the methodologies for these inquiries. In addition, executive and legislative party control comparisons concerning majority control in the House of Representatives and Senate, as well as Presidential party affiliations, could provide a more complete picture of how the branches work together regarding political polarization, and additional interviews could provide a more holistic look at how elected officials view these shifts on a federal level, which could lead to a shift towards the idea of a legislation-timeline first approach to Congress, improving the rates at which elected officials are able to respond to real-time citizen challenges.

CONCLUSION

The present study aimed to identify the correlation between the election cycle and legislative action, if such a correlation existed. As a result, the study created and concluded on the accuracy of two formulas that display the relationship between these factors and concluded that the election cycle does have an impact on legislative action; however, further research is required to quantify this on a linear scale. The ability to analyze these variables formulaically shows that a typically distributed relationship can be displayed and lays a foundation for future research methodologies in this sector. The use of data analysis and correlation coefficients also proves a direct relationship between the election cycle and legislative action in the United States, a relationship that has not yet been studied. This research also contributes to discussions on election cycle limitations and campaign requirements, particularly as political scientists have noted in recent elections when analyzing abbreviated presidential campaigns.

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