

Predicting voting and union support in certification elections: Evidence from Starbucks workers, 2021-2024

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SUMMARY

Labor unions offer a formal channel for workers to collectively voice concerns and negotiate for better wages, benefits, and working conditions with their employers. There has been a rise in worker-led grassroots union campaigns in recent years, with Starbucks workers drawing considerable attention from the public and policymakers. Unionization efforts at Starbucks stores represent an important yet under-explored area of social science research, because the service sector is historically characterized by low unionization rates. To examine factors driving worker participation in voting and support for unions in certification elections, we constructed a unique dataset of 571 unionization petitions filed by Starbucks workers with the National Labor Relations Board (NLRB) between August 2021 and July 2024. We hypothesized that union election success was less likely in larger units, with higher voter turnout, and when elections were delayed, but more likely if there were previous successes. Regression results suggested that larger bargaining units with more eligible voters and higher turnout rates decreased union support and reduced the likelihood of union victories. Additionally, delays between filing petitions and holding elections negatively impacted union support. Finally, prior union victories within a state had a positive association with future unionization efforts, suggesting a “success breeds success” dynamic. The practical implications of these findings were also discussed. Despite successful unionization efforts at Starbucks, workers still faced significant challenges, including delays in contract negotiations and legal opposition from employers. Sustained efforts are necessary to overcome corporate resistance and improve wages and working conditions.

INTRODUCTION

Public support for labor unions in the United States (US) has grown steadily over the past decade. A Gallup poll reported that 70% of Americans expressed approval of unions as of September 2024, up from 54% ten years earlier (1). Despite this growing approval, the proportion of workers who are union members remains low. In 2023, only 10% of US workers were union members, a decline from over 30% in the 1950s (2, 3). In recent years, workers at large corporations such as Starbucks, Apple, Google, The New York Times, and

Amazon have engaged in various organizing efforts (4). Union organizing at Starbucks stands out as a unique case due to its widespread success. Since the first Starbucks store unionized in 2021, more than 11,000 workers across over 500 locations have successfully voted to unionize and were certified by the National Labor Relations Board (NLRB) as of October 2024 (5). With NLRB certification, labor representatives have the legal right to negotiate salaries and working conditions with employers on behalf of workers (6). To provide insights into union certification efforts, this study analyzed data from the NLRB on unionization petitions filed by Starbucks workers between August 2021 and July 2024 to examine the factors driving worker participation in voting and support for unions in certification elections.

Unions give workers a collective voice to express concerns and negotiate for better wages, benefits, and working conditions (6). When workers feel heard and valued, they are more likely to increase work efforts, help each other, and learn new skills to increase productivity (7). Without unions, workers do not have a formal channel to collectively communicate their ideas or even raise concerns with employers in an open and fair environment (7, 8). Unions also raise standards across industries. Higher union participation tends to improve wages and working conditions, even for workers who are not union members, helping to reduce income inequality and improve overall living standards (9).

Despite the important role unions play in improving working conditions, the proportion of workers in the US who are union members has been declining since the 1950s (10). Several factors may explain this decline. Globalization and the rise of multinational corporations moved many manufacturing jobs overseas, leading to job losses in heavily unionized industries (11). Furthermore, political and legal changes have weakened unions' bargaining power. For example, the Taft-Hartley Act of 1947 restricted union activities and made it more difficult for workers to organize (12). As a result of these pressures, union density, the percentage of wage and salary workers who are members of a union, fell to 10% in 2023 (2), a decline from over 30% in the 1950s (3).

However, worker-led unionization efforts have risen across the nation in recent years. This wave of union campaigns has occurred in industries and occupations that do not have a history of strong union membership (13). Baristas at Starbucks, warehouse workers at Amazon, service staff at Trader Joe's, and rideshare drivers have taken steps to organize and achieved some successes (14). Different from traditional unions that typically rely on leadership from established national labor organizations, this new wave of labor movements reflects bottom-up organizing efforts driven by workers at the grassroots level (14).

The COVID-19 Pandemic acted as a major catalyst for a renewed interest in unions (15). Frontline workers in essential positions sought better protection and higher pay during the pandemic and gained public support (15). At the same time, the tightened labor market increased pressure on employers (16). Together, these forces gave workers and labor representatives an opportunity to strengthen bargaining power and improve working conditions.

Finally, social media has revolutionized union organizing by providing a platform for communication and mobilization. Starbucks workers in Buffalo, New York, used Zoom to train other workers across the country to spread unionization efforts (13). Social media has also given workers a way to bypass traditional union structures, making organizing more direct and responsive to workers' needs. Campaigns and hashtags can quickly gain attention and build support from a broader audience (14, 17).

In this paper, we used Starbucks as a case study to examine the recent unionization efforts across the country. Starbucks is the tenth-largest employer in the US, with approximately 402,000 full-time and part-time workers (18). Starbucks is also highly profitable, accounting for a quarter of the total revenue in the coffee & snack shops industry (18). Focusing on Starbucks stores offers several advantages. First, all Starbucks stores in our sample represent first-time labor organizing efforts, which differ from other industries with long histories of unionization, such as manufacturing and healthcare. This is important because our analysis focuses on the factors predicting workers' support for their initial unionization vote. Second, the most common jobs at Starbucks are baristas, cafe servers, and shift supervisors. Their similarities in skill requirements and occupational standards help mitigate the influence of confounding factors such as task characteristics or external regulatory environments. Finally, as a national chain, Starbucks would allow us to identify regional variations in worker support for unionization across stores with the same corporate culture, managerial practices, and workplace conditions. In short, our analysis of Starbucks stores offers a case study that examines the dynamics of labor organizing within a single corporate structure while mitigating potential confounding factors related to occupational and industry-specific variations.

On August 30, 2021, the first group of Starbucks stores in Buffalo filed union election petitions with the NLRB (19). On December 8, 2021, workers voted 19-8 in favor of forming a union at the Elmwood Avenue location, marking the inaugural unionized Starbucks site in the US (20). Since then, unionized Starbucks stores have proliferated across the country. This study sought to determine what factors influence the outcomes of union elections at Starbucks, including voter turnout, pro-union votes, and union election success. We hypothesized that union election success was less likely in larger units, with higher voter turnout, and when elections were delayed, but more likely if there were more previous successes in the same state. Our analysis supported our hypotheses. Specifically, union elections were less likely to succeed in larger units with more eligible voters and in elections with higher turnout rates. Longer delays between petition filing and election were also associated with reduced union support. Finally, prior union election successes within a state had a positive and statistically significant association with subsequent union election outcomes. The results of

this study would offer valuable insights to inform academic discussions and public discourse on worker rights, collective action, and labor policies.

RESULTS

As of July 31, 2024, there were a total of 571 petition cases filed by Starbucks stores since August 2021 (**Figure 1**). Among the 571 cases filed, the majority of these petitions, 466 or 82%, resulted in union representation. Meanwhile, 81 or 14% of the petitions resulted in a failed vote for union representation. Finally, 24 cases or 4% remained open as of July 31, 2024. These data indicate that the vast majority of closed cases have successfully unionized.

The most pronounced temporal pattern was the surge in union petitions filed during the first half of 2022, accounting for about half of all petitions filed since August 2021 (**Figure 2**). This timing suggested that the successful unionization of the Buffalo store inspired similar efforts at other locations. Another notable pattern was that a few cases remained open after a long period of time. Among all closed cases, the average time between filing and election was 59 days, with 57 days for unionized cases and 65 days for failed petitions.

Next, logistic regression models were used to predict voter turnout, the proportion of pro-union votes, and whether the store was successfully unionized, based on a set of theoretically and empirically grounded independent variables. These variables included the number of eligible voters, prior union victories in the state, the delay between petition filing and election, right-to-work status, state-level union membership rates, the occurrence of Service Employee International Union (SEIU)-led strikes, state unemployment rate, and local median family income (**Table 1**). Additional details and empirical evidence were provided in the Materials and Methods section.

Unionization elections had not been conducted in 24 of the 571 petitions as of July 31, 2024. Therefore, our regression analysis was limited to the 547 closed cases. Among these, 13 lacked data on election outcomes and were excluded. Finally, because the first closed petitions in each state had no data on prior success, 53 such cases were removed from regression analysis, resulting in a final sample of 481 cases. Some states had multiple closed petitions on the same date, which explained why the number of excluded cases exceeded 50. Log odds ratios from logistic regressions were calculated (**Table 2**). Voter turnout (**Table 2**, Model 1) was negatively associated with both the number of eligible voters ($b = -0.0322$, $p < 0.001$) and election delay ($b = -0.0132$, $p < 0.001$). Prior union success within a state was negatively related to voter turnout ($b = -0.6105$, $p < 0.05$). Additionally, voter turnout rates were higher in right-to-work states ($b = 0.3860$, $p < 0.001$) and in states with SEIU-led strike activity ($b = 0.3105$, $p < 0.001$). Higher unemployment rates were positively associated with voter turnout ($b = 0.2765$, $p < 0.01$), while union membership and local median family income were not statistically correlated.

One potential concern in our regression analysis was collinearity, which arises when two or more independent variables are highly correlated (21). For example, right-to-work states generally have lower union membership rates, which may introduce collinearity. Collinearity can inflate standard errors, making it difficult to detect statistical significance (21). To evaluate potential collinearity issues in our regression

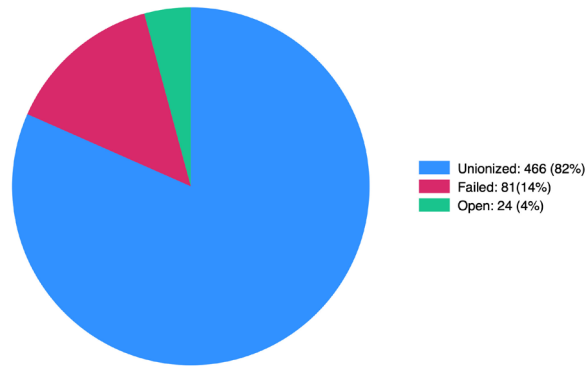


Figure 1: Distribution of outcomes for union election petitions at Starbucks (August 2021 - July 2024). Data are from the National Labor Relations Board (35). A total of 571 first-time union election petitions were filed by Starbucks locations between August 2021 and July 2024. Of these, 466 petitions (82%) resulted in successful unionization, 81 petitions (14%) failed to unionize, and 24 cases (4%) remained open as of July 31, 2024.

models, we examined the correlation matrix and the Variance Inflation Factors (VIF) for the corresponding linear regression models. The correlation matrix showed mostly low to moderate pairwise correlations, with the strongest correlation observed between right-to-work status and union membership in a state (-0.62). The highest VIF value was 2.24, further suggesting that collinearity was not a significant concern.

Union support (**Table 2**, Model 2) was inversely related to voter turnout ($b = -1.4116$, $p < 0.05$). The proportion of pro-union votes was negatively associated with the number of eligible voters ($b = -0.0324$, $p < 0.01$). The analysis also revealed that previous union success significantly predicts union support ($b = 0.8129$, $p < 0.01$). Additionally, the longer the delay between the petition filing and the election, the less likely workers were to favor unionization ($b = -0.0080$, $p < 0.001$). Finally, pro-union votes were negatively related to local median family income ($b = -0.0034$, $p < 0.01$).

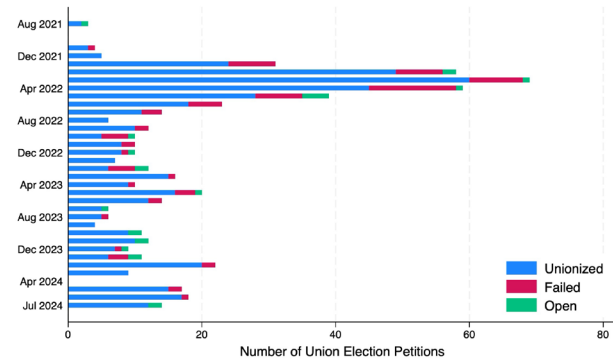


Figure 2: Monthly distribution of union election petitions at Starbucks (August 2021 - July 2024). Data are from the National Labor Relations Board (35). This graph displays the monthly count of union petition cases filed by Starbucks stores between August 2021 and July 2024. Each month shows the number of cases that successfully unionized, those that failed to unionize, and those that remained open as of July 31, 2024.

Similar results were observed for the binary outcome of union success (**Table 2**, Model 3). For instance, union election success was negatively related to the number of eligible voters and was positively related to prior union success in the state. The results also indicated that the longer the delay, the less likely stores were to be unionized. Location in “right-to-work” states and state-level unemployment rates did not significantly predict union election success, nor did union membership in a state and SEIU-led strike activities. Local median family income, however, appeared to be negatively related to union success.

DISCUSSION

Our analysis of the relationship between various factors and unionization success has yielded findings with important implications for future unionization efforts at Starbucks and other companies. First, the data show that a higher number of

Variables	Definition	Mean	SD	Source
Voter turnout	Number of ballots counted divided by number of eligible voters	0.7052	0.1876	National Labor Relations Board (35)
Prop-union votes	Number of votes for union divided by number of ballots counted	0.7520	0.2113	National Labor Relations Board (35)
Unionized	1 = unionized; 0 = failed to unionize	0.8539	0.3535	National Labor Relations Board (35)
Numbers of eligible voters	Numbers of eligible voters in the store	23.3464	8.0741	National Labor Relations Board (35)
Prior union victories	The proportion of prior successful union cases in the state	0.8679	0.1579	National Labor Relations Board (35)
Delay	Number of days between petition filing and election tally	58.9963	29.3069	National Labor Relations Board (35)
Right-to-work	1 = located in a right-to-work state; 0 = otherwise	0.3446	0.4757	National Right to Work Legal Defense Foundation (40)
Unemployment rate	Unemployment rates (%) by state and month	3.6981	0.6932	National Conference of State Legislatures (44)
Union membership	Proportion of union membership in a state	0.0811	0.0327	Union Membership and Coverage Database (43)
SEIU-led strikes	1 = States with an SEIU strike since 2010; 0 = otherwise	0.4738	0.4998	Bureau of Labor Statistics Work Stoppage Program (42)
Local median family income in \$1,000	Median family income of the city/town where the store is located	84.0069	32.6156	American Community Survey (48)

Table 1: Descriptive statistics and data sources for key variables. This table presents the primary dependent and independent variables used in this study. Each row lists the variable name, its definition, the mean and standard deviation (SD), as well as the source of the data. The number of observations is 534. For prior union victories, the number of observations is 481 due to missing values in first closed petitions in each state.

	Model 1 Voter Turnout	Model 2 Pro-Union Votes	Model 3 Unionized
Voter Turnout		-1.4116* (0.019)	-3.0211 (0.070)
Numbers of eligible voters	-0.0322*** (0.000)	-0.0324** (0.001)	-0.0443* (0.030)
Prior union victories	-0.6105* (0.014)	0.8129** (0.009)	1.4042 (0.103)
Delay	-0.0132*** (0.000)	-0.0080*** (0.000)	-0.0191*** (0.000)
Right-to-work	0.3860*** (0.000)	0.1736 (0.345)	0.7023 (0.094)
Unemployment Rate	0.2765** (0.001)	0.1463 (0.091)	0.3147 (0.169)
Union Membership	-2.4550 (0.125)	1.2542 (0.597)	4.1270 (0.503)
SEIU-led Strikes	0.3105*** (0.000)	0.1794 (0.236)	0.3472 (0.368)
Local median family income	0.0002 (0.851)	-0.0034** (0.001)	-0.0074* (0.018)
Constant	1.8633*** (0.000)	2.0993** (0.009)	3.6131 (0.113)
N	481	481	481
Log Likelihood	-274	-266	-192

Table 2: Logistic regression of union election outcomes at Starbucks. Each column represents one regression model. Model 1 is a fractional logistic regression with Voter Turnout as its dependent variable; Model 2 is a fractional logistic regression with Pro-union Votes as the dependent variable; Model 3 is a binary logistic model with Unionized as the dependent variable. All models are estimated using Stata 18.0. Log odds ratios from logistic regressions are reported. p-values in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

eligible voters correlates with reduced union support, a result consistent with Heneman and Sandver (22). Larger groups of eligible voters often encompass a wider range of interests and priorities, leading to fragmentation within the voter base and making it more challenging for unions to garner unified support. In the case of Starbucks, the varying establishment sizes across stores suggest that a one-size-fits-all strategy is unlikely to be effective. Local organizers may want to tailor their approaches to the specific circumstances of each store. Second, the negative relationship between voter turnout and union success, a result consistent with Delaney (23), suggests that union victories are not merely a result of broad participation but are shaped by more complex dynamics among voters. This indicates that unions may need to adopt more nuanced, targeted outreach strategies, focusing on key segments of the workforce who are more likely to support unionization.

Third, longer election timelines are associated with lower union support, which is consistent with the observations of Heneman and Sandver (22). This result highlights the critical need to maintain momentum in union campaigns. For example, unions might consider negotiating for shorter timelines or implementing strategies to sustain engagement over extended periods. Strategies such as consistent communication and regular updates could help keep the campaign energized and focused, minimizing the risk of losing momentum as time goes on. These suggestions would benefit from further testing and validation. Finally, the positive impact of prior union success in a state on future union efforts suggests that success could lead to a self-reinforcing cycle. When union elections achieve positive outcomes, it can boost worker confidence and morale in other locations, making

them more inclined to support future unionization efforts. This “success breeds success” dynamic makes it easier for unions to organize and achieve their objectives.

This study has a few limitations. The findings may be subject to omitted variable bias, as there could be unexamined factors influencing unionization outcomes. For example, union support often varies based on workers’ characteristics, such as age, gender, race/ethnicity, and political orientations (24, 25). Unfortunately, these individual-level data are unavailable. Additionally, correlations are not causations. For instance, election delays are found to be negatively related to union election success; however, the delay in election timing might not be entirely exogenous; it can be influenced by underlying anti-union sentiments among managers and workers. Management may intentionally delay elections with low perceived support to further erode support. Future research may seek to address these limitations by incorporating detailed data on the demographic characteristics of workers and by using research designs that are more suitable for establishing causality.

While the unionization of Starbucks stores is a significant achievement, it is just the beginning of the challenging process of building a strong, effective union capable of delivering on the promises made during the campaign. Unionization does not automatically result in improved working conditions; in fact, it can take years to negotiate new contracts. As of April 2024, representatives from Starbucks and Workers United, which represents Starbucks unions, restarted negotiations for a union contract framework for each of the unionized stores after a previous standoff (26). Although there were initial reports suggesting that the two sides were making progress towards reaching a contract, none of the over 400 unionized Starbucks stores have successfully negotiated a contract with the company as of August 2024 (27). This prolonged delay in reaching contracts could have a chilling effect on the broader labor movement, as the inability to secure contracts can erode worker morale and diminish the perceived benefits of unionization.

In addition to delaying contract negotiations, Starbucks has employed a range of strategies to undermine workers’ unionization efforts. While employer statements of opinion or anti-union campaigns are not always unlawful, several complaints filed by NLRB Regional Directors, as well as decisions by NLRB administrative law judges, have alleged or concluded that Starbucks’s conduct has crossed legal boundaries (28). Unlawful conduct alleged or confirmed by NLRB officials includes organizing captive audience meetings where employees were compelled to attend anti-union presentations designed to sway their support and emphasize the potential downsides of union involvement (28). Kreidler reported in August 2023 that over the past eight months, NLRB administrative judges had decided that Starbucks committed more than 230 federal labor law violations in 22 (out of 23) separate cases (29).

In more contentious instances, there have been allegations that Starbucks went as far as closing unionized stores. A notable example involves the closure of all three Starbucks locations in Ithaca, New York, after staff at these stores voted to unionize in April 2022 (30). Starbucks first closed the Collegetown store in June 2022, where more than half of the staff were college students, and then shuttered the remaining two stores in May 2023 (30, 31). In response, Starbucks

Workers United sought a court injunction to stop the closures and lodged complaints of unfair labor practices against the company. On July 6, 2023, an NLRB administrative law judge concluded that Starbucks violated the National Labor Relations Act (NLRA) and recommended that the NLRB order the reopening of the Collegetown store and the reinstatement of terminated workers (31). However, a recent Supreme Court decision in a case filed by Starbucks concerning the dismissal of Memphis workers in 2022 has led to a stricter standard for reinstating workers (32). This ruling makes it more difficult for the NLRB to step in when a company is alleged to have unlawfully suppressed unionization efforts (33).

In conclusion, the Starbucks unionization efforts highlight the ongoing struggle between workers seeking improved conditions and collective bargaining rights and a corporate entity prioritizing control and profitability. We found the Starbucks unionization case particularly compelling because it mirrors the experiences of many young workers employed at similar establishments like Chipotle, Trader Joe's, and other retail or food service chains (34). These young workers, often passionate about advocating for better working conditions, may not fully understand their legal rights or the protective role of the NLRB. The Starbucks case underscores the complex dynamics at play when individuals challenge powerful corporate interests, serving as a powerful reminder of the importance of collective action and labor rights advocacy in our society.

MATERIALS AND METHODS

Data sources

Official data provided on the NLRB website was used to obtain the most accurate and complete record of unionization efforts at Starbucks stores (35). As a federal agency, one of the primary statutory mandates of the NLRB is to oversee and conduct certification elections to determine union representation. The NLRB data provide comprehensive information on union petitions and elections in the US. The search was narrowed by using "Starbucks" with a case type of "Representation," spanning the period from August 1, 2021, to July 31, 2024. This search yielded 608 cases. Some of these cases were duplicates (4 cases), revised (18 cases), rerun (9 cases), or withdrawn before going through the voting process (2 cases). Because the analysis focused on the initial voting outcomes of first-time union elections, revised and rerun cases were excluded. In addition, while petitions can be withdrawn for various reasons, including procedural issues, they may also be used to avoid unfavorable outcomes, which means that removing withdrawn cases could potentially underestimate the proportion of failed cases; however, there are only 2 such instances. After these cases were excluded, the final sample consisted of 571 unique cases.

Outcome variables

Voter turnout is measured by the proportion of eligible workers who cast their ballots. Compared to political elections, the usually close margins in union representation elections and the small number of eligible voters make each voter's importance more apparent (36). Some workers may abstain from voting because they fear retaliation. For these individuals, abstaining indicates their perception that the risks associated with voting are greater than the potential benefits (37). Thus, voter turnout reflects the proportion of workers with

strong—either positive or negative—views toward unions and who believe the election result will significantly impact them. The level of pro-union support is measured by the proportion of those who supported union representation among those who voted. This metric is crucial as it indicates the level of enthusiasm for unionization among workers and reflects broader workplace dynamics, including the effectiveness of union campaigns and management's counter-efforts (38). A higher proportion of pro-union votes may signal a strong desire for collective bargaining and workers' perceived need for improved working conditions, job security, or a voice in the workplace.

For the closed petitions, there are two possible outcomes: either unionized or failed to unionize. A Starbucks store becomes "unionized" when eligible voters at that store vote in favor of forming a union. A "failed" vote means the employees vote against forming a union, and the store remains non-unionized. The outcome is determined by a majority vote in favor of union representation among those who participated.

Independent variables

The size of a bargaining unit is a widely studied variable influencing workers' intentions to participate in labor organizing and the success of union elections (22). In smaller units, social pressure and incentives are more tangible, motivating workers' engagement in voting as a means of expressing collective identity and action. In contrast, larger units are characterized by more diverse motives and goals, reducing the perceived pressure to conform and making collective decisions less likely. Supporting these ideas, Heneman and Sandver observed that the union success rate dropped from 66% in units with less than 9 workers to 52% in units with more than 100 workers (22). In this study, we measured unit size as the total number of eligible voters at each Starbucks store.

Unionization among baristas and other frontline service workers is relatively uncommon. In states with successful Starbucks unionization votes, workers may view unionization as a more attractive and viable option. Conversely, in states where such successes are rare, the idea of unionizing may seem unattractive or even threatening to workers, who might fear backlash or failure. To measure the influence of these successes, we constructed a variable called "prior unionization success," defined as the proportion of successful unionization cases in the state prior to the date of each petition case. Because the first case in each state has no prior success data, we remove these cases from the analysis. Delay in the organizing process refers to the period between the petition filing and the election. Delay allows employers more time to carry out anti-union campaigns, which can undermine the unionization effort (22). As time progresses, the dedication of union organizing members tends to wane (22). Meanwhile, pro-union workers may experience increased anti-union pressure as a result of the employer's influence over the process. Cooke found that every month of delay reduced the proportion of pro-union workers by about half a percentage point and reduced the probability of winning by about one percentage point (38). Roomkin and Block reported that the delay averaged 2.2 months for employer victories, compared to 1.9 months for union victories (36).

State- and local-level control variables

In addition to the election-level independent variables, we included a set of state- and local-level variables to control for variations in socio-political and economic conditions across Starbucks store locations. The rationale for selecting these variables is discussed below.

Right-to-work laws give workers the option of not paying union dues in a unionized workplace. These laws can reduce the perceived benefits of unionization, even among workers who hold favorable views of unions, because workers receive full union representation without paying for the service (39). This financial strain on unions reduces their capacity to effectively organize and represent workers (38). Additionally, these laws may serve as an indicator of prevailing negative attitudes toward unions in the state (23). We created a dummy variable indicating whether the Starbucks store was in a right-to-work state. Right-to-work status for each state was manually coded using data collected from the National Right to Work Legal Defense Foundation (40). These data were then merged with the NLRB data by state.

One concern in labor organizing campaigns is the opposition to major strikes. Strike activities in a state are inversely related to pro-union votes (41). When workers perceive a higher likelihood of strikes, they may become more apprehensive about unionization, which can ultimately reduce their support for the union (41). We obtained data from the Bureau of Labor Statistics Work Stoppage Program, which tracks work stoppages with more than 1000 workers that continue for at least one full shift (42). Given that almost all local units seeking certification are affiliated with Starbucks Workers United, which is connected to SEIU, we focused on SEIU-led major work stoppages across industries and found that 11 states had experienced strike activity since 2010. We coded the level of strike activity in these states as 1, and set the level in other states to 0.

If a higher proportion of workers in a state are unionized, the community is likely more receptive to unions. In addition, the presence of established unions can provide workers with examples of successful organizing efforts and collective bargaining outcomes, further encouraging them to vote in favor of union representation. We obtained state-level union membership data compiled by Hirsch, Macpherson, and Even based on Current Population Survey (CPS) data (43). This variable measures the proportion of private-sector workers who are unionized in each state. Since the first Starbucks certification election took place in 2021, we used union membership data from the year 2020 to ensure that our data precedes all elections. Data on union membership were drawn from the Union Membership and Coverage Database (43).

Union activity declines when unemployment is high for two reasons. First, high unemployment rates increase the perceived risk of job loss, so workers may withdraw their support for a union to reduce this risk. Second, high unemployment rates suggest employers have more power to hire new employees from the external labor market (38). This increased power gives employers an opportunity to dilute union support by hiring replacement workers or by employing intimidating tactics to discourage union activity. However, some studies suggest that, since workers are less likely to quit their current jobs for external opportunities, they are more motivated to improve their current work conditions

through collective action (22). State unemployment rates were collected from historical Current Population Survey data available on the National Conference of State Legislatures website and matched to NLRB data by state, month, and year (44).

Prior research suggests that union membership is negatively associated with working and working-aged poverty (45). In fact, declining union membership has contributed significantly to the rise of income inequality (46). Thus, individuals with lower family incomes may have a stronger incentive to join unions to collectively bargain for better wages and benefits. In addition, unions often provide job security, which is appealing to those without stable employment options (47). We hypothesized that higher local median household income would be negatively associated with union support, voter turnout, and the likelihood of union victory. Median household income data were collected from American Community Survey and merged with the NLRB database by city/town and state (48).

Regression methods

Because the outcomes were either proportions (e.g., voter turnout and pro-union vote) or binary (e.g., unionized or failed to unionize), logistic regressions are appropriate. A total of three models were estimated: Model 1 is a fractional logistic regression with Voter Turnout as its dependent variable; Model 2 is a fractional logistic regression with Pro-union Votes as the dependent variable; Model 3 is a binary logistic model with Unionized as the dependent variable. We included the same set of independent variables across all three models to ensure consistency and comparability in the analysis. Additionally, voter turnout was incorporated as a predictor in the models for both the proportion of pro-union votes and the likelihood of a pro-union outcome. All models are estimated using Stata 18.0. Models 1 and 2 used “fracreg logit” and Model 3 used “logit” procedures.

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