Elite Reform and Mass Resistance:
Female Suffrage and Political Preferences in Germany, 1893–1933[*]

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Abstract

Who drives social change—the people or activist elites? While progressive reforms are often championed by elites, their preferences may diverge from those of the broader group they aim to represent, producing unintended political consequences. We study this dynamic in the context of female suffrage in Germany, a reform driven by activist elites but ultimately lacking support from the broader female electorate. Using newly digitized voting data from Munich, linked to individual socioeconomic records, we identify the political preferences of elite and non-elite women. We exploit variation in elite composition based on pre-franchise socioeconomic characteristics, as well as variation in World War I widowhood, which increased the observability of non-elite women in household records. Precincts with more elite women supported the social-liberal party that had long advocated women's rights, while those with greater non-elite female presence shifted toward nationalist parties promoting traditional gender norms. This divergence persists across multiple elections and is not explained by war-related shocks or male voting behavior. Our findings suggest that formal inclusion alone may be insufficient to shift entrenched social and political hierarchies.

Keywords: Suffrage, Elections, Social change

JEL codes: N4, D7, R2, P4

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1 Introduction

Who drives social change — the people or activist elites? Progressive reforms, championed by elites to improve the lives of in-group members, often create a backlash where out-group individuals threaten to reverse societal progress (e.g. the civil rights movement). In this paper, we propose another source of backlash against social change, arising from within-group heterogeneity: when activist leaders differ too much from a group's majority, progressive policies can also create backlash from the conservative in-group majority. This paper examines one such policy: the introduction of female suffrage, where the leading activists championing reform were often considerably more progressive than the average women eventually enfranchised.

Female suffrage represents a major institutional change, reshaping political representation, public policy, and social inequalities (Acemoglu and Robinson, 2000). Existing research suggests that enfranchisement generally shifted governments leftward, leading to greater social spending and an increase in liberal voting patterns among legislators (Lott and Kenny, 1999; Edlund and Pande, 2002; Miller, 2008; Teele, 2018). However, historical evidence also indicates that female voters often exhibited *more* conservative preferences than their male counterparts (Ogburn and Goltra, 1919; Willey and Rice, 1924; Tingsten, 1937; Morgan-Collins, 2015). Aggregate voting behavior may therefore obscure important differences between a politically active elite — who may have held more progressive views — and the broader female electorate.

This paper examines the extension of female voting rights in Germany in 1918 to distinguish the political preferences of elite women from those of the broader female electorate. Prior to enfranchisement, female suffrage was a niche topic during the Imperial German Empire, advocated for by well-educated women inside the Social Democratic Party (Evans, 1980). Following the collapse of the German Empire in 1918, universal female suffrage was enacted with minimal public debate (Sneeringer, 2002; Sandmann-Bremme, 1956).

Our empirical approach rests on the idea that observed vote shares reflect the weighted preferences of three groups: elite women, the broader female electorate, and men. The key empirical challenge lies in separating the preferences of elite and non-elite women, which cannot be directly observed because voting is anonymous. We address this challenge using household-level data to identify and locate women: Elite status is measured using occupational and demographic characteristics, while variation in World War I-induced widowhood affects the observability of non-elite women, commonly subsumed under their husband's name. Finally, male preferences are absorbed by fixed effects, under the assumption that they are uncorrelated with female composition of the electorate—an identifying assumption analogous to parallel trends in a difference-in-differences framework.

We implement this approach in a differences-in-differences framework linking household-level census data to all elections between 1893 and 1933 at the precinct level. Precincts are the smallest possible aggregation of voting data: they usually contain one polling station and only aggregate a few hundred votes from a handful of streets. This data is unprecedented as existing research either compare electoral districts comprised of a few hundred precincts (Satyanath et al., 2017), or

study cross-sections of precincts (de Juan et al., 2024; Caprettini et al., 2021).

In each precinct, we distinguish elite and non-elite women using socio-economic information derived from newly digitized household-level data from Munich city directories, which record the exact address, gender, and occupation of each household head (Bühler et al., 2024). The directories list two types of women: unmarried women and widows. Based on occupational patterns, we establish that unmarried women—who appear independently in the directories—held disproportionately higher-status positions than widows (e.g., business owners, teachers as opposed to carpenters), making them a suitable proxy for the female activist elite.

While this allows us to capture elite preferences, identifying the preferences of the broader female electorate poses additional challenges. A key concern is that observable non-elite women—primarily widows—tend to be older and may differ systematically from the average female voter. To address this concern, we exploit the increase in the number of widowed households between 1914 and 1919 induced by World War I. This increase generates cross-precinct variation in the observability of non-elite women, enabling us to infer their political preferences—and, because their observability results from an exogenous shock rather than selective sorting, these newly widowed women are more representative than the pre-war widow population.

We thus have two measures that capture the preferences of the female elite and broader female electorate at the precinct level: (i) the number of non-widowed women in 1910 and (ii) the change in the number widows between 1914 and 1919. Both measures are divided by the number of women living in a precinct in 1910 to ensure comparability and hold the total number of women in a precinct constant. Using pre-war measures also ensures that anticipation of franchise and selection into precincts is unlikely.

While women were not yet enfranchised, our identification assumes that trends in party vote shares across precincts with different female composition followed similar trajectories prior to the reform. The absence of such differential pre-trends thus supports the validity of our difference-in-differences design. Following the extension of voting rights, however, two diverging trends emerge: On the one hand, the share of elite women in a precinct *positively* predicts the vote share for the main social-liberal party that had long advocated for female suffrage, and *negatively* predicts support for nationalist parties, which promoted traditional gender norms. In contrast, a change in widow representation predicts the opposite pattern—higher vote shares for nationalist parties and lower support for the social-liberal party.

Our findings highlight that women did not vote as a homogeneous group: while elite women supported progressive parties, the broader female electorate disproportionately supported nationalist platforms that promoted traditional gender roles. This pattern is consistent with a backlash dynamic: while elites pushed for progressive reform, the broader female electorate responded by favoring parties advocating a return to traditional gender roles. Together, these findings suggest that elite and non-elite women aligned with opposing political platforms, revealing a deep ideological divide within the female electorate—even among women not subject to direct male influence.

While we interpret the observed divergence as consistent with a backlash dynamic, a fundamental limitation remains: voting is anonymous, and individual-level behavior cannot be directly observed. Moreover, because vote shares reflect only male preferences prior to enfranchisement, any observed shift after 1918 may simply reflect a compositional change in the electorate—the addition of female voters. Our difference-in-differences design addresses this concern by leveraging variation in female group composition across precincts, assuming that changes in male voting behavior are uncorrelated with this composition. We provide evidence supporting this identifying assumption: empirically, we find no indication that vote share changes reflect shifts in male voting behavior or composition. Under this condition, changes in vote shares can be interpreted as reflecting the political preferences of newly enfranchised women. These shifts may capture either pre-existing ideological heterogeneity between elite and non-elite women, or a reactive backlash against elite-led reform. Qualitative and quantitative evidence aligns with the backlash interpretation, as elite women appear to have underestimated the importance of religion and traditional family structures among the broader female electorate (Sandmann-Bremme, 1956; Sneeringer, 2002).

Interpreting the observed differences in vote shares as evidence of women's group preferences requires two conditions: that elite and non-elite women differed systematically in their socio-economic characteristics, and that vote shares can be attributed to variation in group composition rather than other confounding factors. While we provide evidence for the first condition through differences in occupational structures, we must also demonstrate that the observed correlations are not driven by unobserved trends, measurement error, or omitted variables.

Our results remain robust across various model specifications and fixed effects, suggesting that unobservable variation is either sufficiently absorbed or uncorrelated with our two measures. In addition, since female suffrage was granted unexpectedly, there is no reason to expect that women strategically sorted into specific precincts in 1910 — or in any other year — to influence electoral outcomes. Similarly, restricting our analysis to precincts in Munich — rather than electoral districts, states, or all of Germany — allows us to hold key determinants of voting behavior, such as religion, urbanization, and labor market conditions constant.

Our findings also remain stable across a wide range of additional tests. First, we are able to replicate our results using post-franchise precincts as the level of observation instead of precincts in 1912. They also hold when excluding specific elections, geographic areas, or precincts. For instance, we can exclude, or restrict our analysis to, the first election to the National Assembly — which technically predates the Weimar Republic—as well as all elections in the 1930s, when the Great Depression may have influenced voter preferences. Moreover, our findings remain stable when separately estimating the impact of income, incorporating city-district fixed effects, or systematically dropping precincts by size or average income. Finally, to address concerns of ecological inference, we restrict our sample to precincts in the top and bottom 5% of female representation and find that our estimates remain consistent.

We then test two alternative explanations that might shift preferences at the precinct level: the

role of World War I and selection of tenants. First, given just two weeks separated the end of World War I and the extension of voting rights, war consequences represent the most critical alternative explanation for our findings. Changes in voting behavior before and after 1918 could be driven by grievances about lost family members, economic devastation, social upheaval, and political instability caused by the war, rather than the inclusion of women in the electorate.

We address grievances as a potential confounding factor by directly controlling for precinct-level exposure to World War I, linking individual-level causalities to each resident — and hence future war casualties — in 1914. Controlling for exposure to WWI losses does not affect our findings. Interestingly, the coefficient on war losses is indistinguishable from zero, suggesting that precinct-level wartime losses did not systematically shift political preferences at the time of franchise.[1] Similarly, we identify changes in the number of local businesses between 1914 and 1919 to capture economic changes caused by the war. We again find no impact on political preferences. These findings strengthen our interpretation that the observed voting pattern is explained by women's differential preferences rather than war-related economic or demographic shocks.

Second, the city directory data also enables us to distinguish landlords from tenants. If landlords selected tenants based on their own political views and elite women disproportionately own houses and select tenants, we may mistake tenants' preferences for their landlords' preferences. To address these concerns, we control for average home-ownership structure in our analyses and our findings remain unaffected. This confirms the view that elite women, independent of home-ownership, have different views than the majority and that these preferences explain the observed differences toward the SPD and center parties and away from nationalist parties.

In the final part of our analysis, we show how social capital influences our results. Social capital has been widely recognized as shaping political behavior, especially when leveraged by political movements (Satyanath et al., 2017). We thus explore whether social gathering places — such as inns, churches, clubs and associations, and schools — played a role in moderating the divide between elite and non-elite women. We find that the divergence in voting patterns between elite and non-elite significantly closes in precincts with higher levels of social capital. Importantly, we find these effects only when using inns as a measure of social capital,[2] suggesting that it is not simply the presence of social capital per se that facilitates political convergence, but social capital that fosters debate and the exchange of political ideas.

Taken together, these robustness tests confirm that the observed differences in voting behavior were not driven by pre-existing differences, war-related economic shocks, or pre-existing landlord influence, and are not a result of harmonization processes or measurement error. These findings reinforce our central argument: the political enfranchisement of women played an independent and substantial role in reshaping electoral dynamics. Rather than integrating homogeneously into pre-existing political structures, elite women actively supported social-liberal parties, in contrast

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[1]Losses during World War I did matter in the last elections of the Weimar Republic, but crucial to our identification, not at the start. In a country-wide cross-sectional analysis, de Juan et al. (2024) confirm this result.

[2]Inns served as hubs for social exchange, political meetings and speeches making them natural sites for political persuasion (Satyanath et al., 2017).

to the broader female electorate's alignment with nationalist movements. By demonstrating that this effect was not an artifact of structural or economic conditions, our results provide new insights into the interplay between societal change and politics.

This paper contributes to the literature on female suffrage by shifting the focus from government spending to electoral outcomes in a multi-party system. Existing studies, primarily centered on the United States, have examined the effects of female enfranchisement on the expansion of government (Lott and Kenny, 1999; Edlund and Pande, 2002; Miller, 2008). Our approach departs from this literature in two key ways. First, rather than analyzing fiscal policy responses, we assess how the inclusion of women in the electorate influenced voting behavior across a broad ideological spectrum. In this respect, the German multi-party context is especially suitable as it allows us to capture a more nuanced picture of electoral shifts than studies based on two-party systems. Second, we distinguish between different groups of female voters based on their socio-economic status, enabling us to evaluate whether the democratic response to female suffrage reflects the preferences of the broader female electorate or is shaped disproportionately by a politically active subset of women. In doing so, our study provides new insights into how elite influence and class structure mediate the political consequences of political reforms.

This paper also contributes to the broader literature on political transitions and the role of elites in shaping early democratic reforms. While much of the historical political economy literature examines democratization through the lens of conflict between elites and the broader population (Acemoglu and Robinson, 2000), our findings suggest a more nuanced mechanism: political change can be initiated by a subset of elites whose preferences do not necessarily align with the majority they claim to represent. In this sense, our results complement studies on elite-driven democratization, which highlight how enfranchisement is often the result of strategic decisions by political actors rather than mass mobilization alone (Lizzeri and Persico, 2004; Aidt and Franck, 2015). By documenting how elite women — particularly those in socially influential professions– differed from the broader female electorate, our study illustrates how suffrage reforms can introduce misalignment between political representation and voter preferences, creating conditions for political realignments and backlash (Norris and Inglehart, 2019).

Economic structures and cultural norms have long shaped women's political behavior, with labor market dynamics influencing intra-household bargaining power and gendered political preferences (Becker, 1981; Goldin, 1990; Iversen and Rosenbluth, 2010). However, structural constraints alone do not fully explain women's political engagement, as institutional barriers and cultural norms continued to reinforce politics as a male domain (Burns et al., 2001). Our findings align with theories of cultural resistance to progressive reforms (Inglehart and Norris, 2003), showing that while elite women, more integrated into professional and activist circles, aligned with progressive parties, the broader female electorate upheld traditional gender roles, supporting nationalist parties instead. This divergence suggests that entrenched cultural norms, rather than purely economic structures, shaped early female voting behavior, limiting the political realignment expected from enfranchisement.

2 Historical Background

2.1 Elections during the German Empire: 1871 – 1918

The German Empire, which reigned between 1871 and 1918, held regular elections of its lower house of parliament, the Reichstag, every three years between 1871 and 1893 and every five years between 1893 and 1918. Voting rights were confined to men over the age of 25 who were not serving in the military (Ritter, 1980). In 1912, this meant that 22% of the population could vote, compared to 16% in Great Britain and 28% in the United States (Ritter, 1980). Every electoral district elected one member to the Reichstag with absolute majority. If this could not be achieved in the first round, a run-off election decided the elected member.[3]

Although members of parliament were not required to belong to a party, political consideration and power struggles facilitated the emergence of three major party blocks (Ritter, 1980).[4] The political center was held by the 'zentrum', which largely represented political Catholicism and which advocated for workers rights, social welfare and the interests of the Catholic Church. To the right, the National Liberal Party (NLP) was a main supporter of Bismark's anti-socialist laws designed to curtail the growing strength of the emerging Social Democratic Party (SPD) on the political left. Whereas the SPD gained only 10% of the votes in the 1887 election under the anti-socialist laws, it became the largest party with 23% of the votes when anti-socialist laws expired.

The political system at the beginning of our sample could thus be described as a three block proto-democracy. It had universal suffrage for some men, and was split into three blocks representing social liberal ideas (SPD), catholic conservatism (Zentrum), and national-conservative ideas (NLP). Importantly, just as the SPD began advocating for female suffrage in the 1890s, the NLP was moving in the opposite direction by maintaining the anti-socialist laws and fighting for the interests of nationalist and conservative men (Bielefeld, 2023).

2.2 Elections during the Weimar Republic: 1919 –1933

World War I ended on November 9, 1918 with the proclamation of the German Republic (*'Deutsche Republik'*), also known as the Weimar Republic. In this new republic, the SPD, the strongest party at the time, sought to overcome a structural disadvantage it experienced during the German Empire: It often had the most votes in the first round, but subsequently lost to a unified conservative candidate in the run-off election. As such, the new electoral law signed on November 30 gave the right to vote to all male and female citizens above the age of twenty and decreed that the run-off elections of the German Empire were replaced by a proportional representation system (Winkler, 1993, p. 65). Less than two months later, the first election of the Weimar Republic formed the German National Constitutional Assembly on January 19, 1919.[5] It signed the peace treaty

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[3]To accurately measure preferences across multiple parties, we are using the first round elections only.

[4]Electoral lists initially only contained the name of the candidate without his party membership. This slowly changed in the 1890s, as political parties grew in importance.

[5]It is not clear whether women anticipated that the SPD would extend suffrage. Yet, even under the assumption that every women anticipated this from November 10th, it is unlikely that women strategically re-located and became

of Versailles and designed the constitution of the Weimar Republic. The German National Assembly dissolved on May 21st 1920 to allow for regular elections for the Reichstag on June 6, 1920 (Winkler, 1993).

The Weimar Republic is famous for its multi-party system (Kronenberg, 2007). In part because its proportional representation system did not contain a minimum threshold for entering parliament, its political landscape was highly fragmented. Whereas seven parties competed for power during the first election to the Reichstag in 1920, this number increased 19 in 1932 (Kronenberg, 2007). Broadly speaking, these parties fell into three ideological blocs (Falter et al., 1986):

The Left: The Social Democratic Party (SPD) was the dominant center-left force, focused on workers rights, social welfare and redistribution, with the Independent Social Democratic Party (USPD) and the Communist Party (KPD) positioned further to the left. Crucially, the SPD was the driving force behind female suffrage and campaigned on themes of gender equality and women's political participation.

The Center: The Catholic Zentrum party and its Bavarian counterpart, the Bavarian People's Party (BVP), represented religious conservatism. While Zentrum accepted female suffrage as part of the Weimar constitutional framework, it did not actively campaign for gender equality. Instead, it framed women's political engagement within the context of traditional family and religious values.

The Nationalist Bloc: The German Democratic Party (DDP) and German People's Party (DVP) both opposed the Weimar Republic and the broader societal changes it introduced, including expanded rights for women.[6] These parties instead advocated for nationalist values such as a return to the monarchy and emphasized traditional gender roles, promoting the image of women as mothers and caretakers rather than political actors.

2.3 Winning women's vote

At the time of female suffrage, political parties targeted the new female voters with campaigns that reflected their party's perceived role for women in society. These ideological differences are clearly shown in their campaign posters, presented in Figure 1. On the political left, the SPD promoted equality of the sexes and a social-liberal society, as displayed in Figure 1a. This policy platform was informed by decades of female activists who fought for equality. Yet, while the preferences of these vocal activists was common knowledge, the preferences of broader female electorate was initially unbeknownst to parties (Sneeringer, 2002, p. 14) and the social democratic

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politically informed at a massive scale until January 19th, validating our research design.

[6]The nationalist bloc also includes extreme far-right parties such as the German National People's Party (DNVP) as well as Hitler's National Socialist Freedom Movement (NSDAP). However, as these parties did not exist pre-franchise, we do not include them in our analysis. Including their vote shares in the nationalist voting bloc in the post-period, however, only strengthens our results (see Table A.4).

party underestimated the centrality of religion in the shaping the preferences and values of women (Sneeringer, 2002, p. 57). As shown in Figures 1b and 1c, however, centrist and nationalistic parties promoted more traditional gender roles, such as women as mothers and saviors of children, and generally resisted changes to the status quo brought forward from the left.

Despite leading the fight for female suffrage, the SPD struggled to win women's votes. In a number of special election counts, women consistently supported parties other than the SPD, including in cities like Cologne, Munich, and other Bavarian towns (Sneeringer, 2002; Falter et al., 1986). Instead, female voters were more likely to support Zentrum or the BVP, reflecting the continued importance of religion and tradition in shaping women's political preferences.

In this respect, elite women who fought for female voting rights underestimated the centrality of religion and traditional family structures in the lives of most women (Sandmann-Bremme, 1956; Sneeringer, 2002). While feminist activists within the SPD promoted a vision of gender equality and secularism, many female voters were more concerned with maintaining established social and religious values.

In summary, the historical literature indicates that women were less likely than men to vote for the party that fought for their franchise. Yet, this stands in contrast to the established political economy literature, which suggests that newly enfranchised groups tend to support parties advocating policies aligned with their interests. Our study leverages historical micro-data to explore this puzzle and shed light on the determinants of women's political behavior in early democratic Germany.

3 Data

To conduct this study, we hand collect data from novel, historical sources of individual level micro-data to construct a panel of voting precincts in Munich between 1893 and 1933. These data comprise three main building blocks which we describe in this section.

City Directories (Address Bücher): We digitize nine city directories from periods before and after female suffrage (i.e., 1893, 1895, 1900, 1905, 1910, 1919, 1924, 1929, and 1933). As noted in Bühler et al. (2024), city directories were the primary source to locate and contact people in a city. They contained the names of the heads of each household in the city, the exact address, occupation of the household head as well as an indicator for whether a woman leading a household was a widow. For each directory, we obtain scanned copies from the Bavarian State Library and transcribe the entries with the help of a data entry company. Bühler et al. (2024) note that the transcription error is less than 0.1%.

There are two primary reasons why information from the Munich city directories is especially suitable for quantitative analysis. First, during the late 19th and early 20th century, Munich was a large, industrial and rapidly growing urban center in the country with active political participation

across the spectrum.[7] Second, the records are published by the police administration of the state of Bavaria and by the city of Munich and rely on resident registration records, making the data accurate and complete. For example, using its information, we are able to precisely geo-locate each address in the city and link them to voting precincts (explained below). We are also able to take into account renamed streets, as well as buildings that are torn down and rebuilt.

City Census: We hand collect data from the 1910 census which was used to construct the 1912 voting precincts. These data come from the city archives and contain information at the address level (i.e., an apartment building, but not the specific unit within the building). In this census, enumerators recorded the exact number of men and women at every address.

We link the 1910 census to the 1910 city directory in order to construct our explanatory variables. First, the share of households headed by non-widowed women (i.e., independent "elite" women). For each address a in voting precinct p, we divide the number of non-widowed female household heads from the directory by the total number of women recorded living in that address from the census. We then aggregate this measure to the level of a voting precinct as defined by 1912 precinct boundaries:

$$\text{Share Elite}_{p,1910} = \frac{\sum_{a \in p} \text{\#non-widowed female-led households in directory}_{a,1910}}{\sum_{a \in p} \text{\#women in census}_{a,1910}}$$

Second, we capture the preferences of the broader female electorate by measuring the number of widows in a precinct. An important question regarding this measure is the extent to which widowed women actually represent the preferences of non-elite women and not, say, of elderly women. To alleviate this important concern, we subtract the number of widowed female household heads in 1914 from the number of widowed household heads in 1919, immediately after World War I. By taking the difference in the number of widows immediately before and after the War, our measure arguably captures women exogenously "pushed" into widowed status. More precisely, for each address a in a voting precinct p, we construct the share of widows as follows:

$$\text{Change Widows}_{p,1919-1914} = \frac{\sum_{a \in p} \left(\text{\#widowed households}_{a,1919} - \text{\#widowed households}_{a,1914} \right)}{\sum_{a \in p} \text{\#women in census}_{a,1910}}$$

Election Results We digitize election results at the precinct-level from local archives containing full hand-written originals for all elections since 1874. We use the 1893, 1898, 1903, 1907, and 1912 elections as pre-franchise results, and the 1919, 1920, 1924 (May and December), 1928, 1930, 1932 (July and November), and 1933 elections as post-franchise results.[8]

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[7]Lenin, the leader of the upcoming Soviet Republic, lived in Munich between 1900-02 planning and publishing with other Marxists; Hitler lived in Munich from 1913 on.

[8]Two data caveats apply: First, we include the election to the National Assembly in January 1919, even though many parties either did not adjust to women's suffrage, or simply did not exist yet. Second, we include 1907, even though we only have results for the inner city of Munich. As we demonstrate later in the paper, our results are not sensitive to any one particular election (or precinct).

Every election result contains two sets of documents: (1) the election results by precinct number and (2) a list of each address and the precinct to which it belongs. We use this mapping between addresses and election results to identify the exact households per voting district per election. We merge these election results to our directory data, always to the closest earlier directory, effectively linking 2,303,017 household-year observations across 13 elections to their respective precincts. This allows us to link the share of independent women from each address to a respective voting precinct.

The party landscape during the Weimar Republic was extremely splintered with up to 21 parties vying for votes. In our analyses we consider the largest and most important parties during each election, abstracting from small parties with few votes,[9] which we classify into three voting blocs: (1) the SPD, which advocated for female suffrage and gender equality (as the SPD is the oldest continuously existing party without large swings in policy platforms, it is not grouped with other parties); (2) the conservative center (Zentrum and BVP parties) which accepted female suffrage but promoted more traditional gender norms; and (3) the nationalist bloc which comprised of parties that advocated against the Weimar Republic, fought for a return to the Monarchy and resisted female suffrage and broader change in women's role in society.[10]

World War I Losses: The extension of voting rights in Germany on 30 November 1918 occurred just weeks after the end of the first World War on 11 November 1918. An analysis of voting behavior before and after 1918 could therefore be explained just as much, if not more, by economic losses and grievances as a result of the War rather than by the extension of voting rights to women. To rule out this important confounding factor in our analysis, we explore specifications that directly control for precinct-level exposure to World War I by exploiting variation from individual-level casualty lists digitized by the *Verein für Computergenealogie*. Based on soldiers first and last names, we identify soldiers in the 1914 directory of Munich. Using this procedure, we are able to identify 30,514 unique soldiers which we are able to link to 17.1% of the addresses in Munich. Of the 30,514 unique soldiers matched to an address in 1914, 17,178 of them were no longer registered at the same address in 1919. Finally, we aggregate these losses to the precinct and divide by the number of households in 1910 to measure the share of households experiencing a loss (9.8%).[11] We also use the rich city directory data to calculate the changes in the number of local businesses before and after the War which we use to control for economic losses.

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[9]We present the most relevant parties during each election cycle and our classification of them into blocs in Appendix A.3. Smaller Parties are excluded, but make up less than 2% of cast votes in 1932.

[10]We exclude the ultra-right DNVP and NSDAP parties, as well as the communist KPD, from this bloc even though they shared a commitment to abandon the Weimar Republic. Yet, whereas the right-wing parties were against the changing role for women, the KPD supported it. Figure A.3 shows how each normalized bloc votes across the four decades in our sample.

[11]We understand that any matching based on last- and first names comes with measurement error. While we restrict our initial approach to rare last- and first name comparisons, we also explore alternative measures and show that even identifying casualties based on a widow with the same last name in the exact apartment yields similar conclusions.

3.1 Harmonizing precincts

In our setting, precinct boundaries change across elections, meaning that the same address could belong to different precincts over time. A particular extreme example is 1924, where the May 1924 election, which polled the votes of men and women separately, assigned addresses to 166 precincts while the December 1924 election assigned these same addresses to 325 precincts. Changes were motivated by growing population in the city, as well as the incorporation of suburbs into the Munich cityscape. An implicit rule, mentioned throughout the entire archival record, was to have poll stations not overflowing with voters. Precinct boundaries were thus adjusted to contain approximately 1,000 eligible voters per precinct.[12] To enable meaningful comparisons over time, we harmonize election results to a fixed set of precinct boundaries as defined by the 1912 elections.

We tackle the harmonization problem with the help of our directories data. In a first step, we aggregate the household information of every directory to one of 26,571 addresses during the Weimar Republic (17,935 during the German Empire). We then use this address-level information to allocate the precinct-level voting results to each address. The result is an address-level election result, assuming that all addresses with the same characteristics within a precinct vote similar. As each precinct in 1912 contains on average 95 addresses in 6 streets, we believe this assumption to be reasonable.[13]

In our main analysis we assume that the number of households living in an address is a sufficient statistic to explain within precinct voting patterns. Specifically, we calculate votes for party j in address a of precinct p as a fraction of households:

$$Vote_{a,p}^{j} = Vote_{p}^{j} \times \frac{HH_a}{\sum_{a \in p} HH_a}$$

In this harmonization procedure, addresses a with more households HH_a contribute more votes to party j in precinct p. It is easy to see that $\frac{HH_a}{\sum_{a \in p} HH_a} \in [0,1]$ sums to one. As a first test of this assumption, we compare the total number of households $\sum_{a \in p} HH_a$ to the recorded electorate in precinct p in 1912. As women could not vote yet, the mean number of Households (885.1) closely matching the size of the electorate in precincts (796.7). In Appendix A, we explore alternative harmonization methods all yielding the same conclusions.

Finally, to avoid a Moulton-type problem of inconsistent standard errors with artificially created variation at the address level, we aggregate the election results at each address ($Vote_{a,p}^{j}$) to a common frame of reference. We use the 1912 Munich precincts as a constant spatial reference for its proximity to WWI, enfranchisement, and the full-count census of 1910, providing a clear pre-treatment division –and characterization– of addresses. Addresses a that are not part of precincts in 1912 are excluded from the sample, unless their street-number combination is between two existing numbers of the same street s in the same precinct p, or all previous addresses a of this

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[12]A comparable example in the context of the United States are congressional district results, where redistricting after each census adjusts for population changes.

[13]Due to franchise precincts become even smaller to accommodate the "1,000 eligible voters per precinct" ideal: The average precinct in 1933 contains 663 households, 6 streets, and 77 addresses.

street s are in the same precinct p: $\forall a \in s, a \in p$.[14] In Appendix A, we show that our results are robust to using 1919 precincts as a spatial reference instead.[15]

The resulting data contains 175 precincts in two electoral districts across 13 elections from 1893–1933. We have election results for 2,218 observations out of 2,275: We miss 12 in 1893, 8 in 1898, and 3 in 1903 due to city growth, and 124 in 1907 due to missing data for the second electoral district. The average address in 1912 contains 8.7 households across 2.9 floors. On average, 19% of households are led by women, the SPD gained 53% of the vote, and turnout stood at 80.1%. In 1920, these numbers changed to 23.5% of households led by women, 18.8% vote share for the SPD at a turnout of 85.2%.

4 Empirical Strategy

4.1 Female Preferences by Elite Status

We use the extension of franchise in 1918 to infer differences in political preferences between elite and the broader female electorate. We infer elite female preferences from the presence of households led by non-widowed women, and interpret the presence of widowed households as a proxy for the preferences of the broader female electorate. In this subsection we support this claim with evidence: In Figure 2, we plot the five most frequent female occupations by widow status exploiting occupational information from the city directories.

The panel on the left demonstrates that non-widow female household heads disproportionately hold higher-status, elite occupations. These include rentiers (i.e., non-working women living off assets and inheritance), business owners, and teachers as well as tailors and artists. What is more, some 53 percent of the 12,711 non-widowed women are concentrated among three of these occupations — i.e., rentiers, business owners and teachers — generally considered as members of both the economic and human capital elites.

By contrast, the panel on the right demonstrates that households led by widowed women hold systematically different occupations.[16] These include carpenters, merchants, day laborers, and military service. What is more, these women are far more dispersed across occupations: just 24 percent of the 17,068 non-widowed women in the data hold *any* of these top five occupations. We thus argue that, because of these occupational differences, the share of non-widowed independent women in a precinct represents a measure of elite female preferences, while the share of widowed women measures the preferences of the broader female electorate.[17]

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[14]Reassuringly, this procedure adds almost no addresses in 1920 and 1924. Yet, it adds approximately 3,000 addresses in 1932 and 1933 which do not impact our results. The results are completely robust to only using the 14,398 addresses in 1912; this procedure only adds precision.

[15]We also show in Appendix A.4 how our procedure avoids city growth due to urbanization of the periphery and how our process aggregates, rather than splits, information from post-franchise precincts.

[16]As the occupations for widowed women are those of their deceased husbands, the difference in socio-economic status is likely even larger.

[17]Appendix D repeats this exercise with the actual full-text German occupational titles without grouping as well as occupational scores to come to the same conclusion. Moreover, in Appendix D.1 we use occupational scores derived

4.2 A Stylzed Model of Voting

Observed vote shares in Munich reflect the preferences of three groups, weighted by their relative presence in the electorate and their propensity to vote.[18] In its simplest form, we model the vote share for party j in precinct p as a weighted sum of group-specific preferences:

$$Vote_p^j = \beta^{j,E} Elites_p + \beta^{j,F} Female\ Electorate_p + \beta^{j,M} Male\ Electorate_p$$

where $Elites_p$, $Female\ Electorate_p$, and $Male\ Electorate_p$ represent the share of each group in precinct p and each $\beta^{j,g}$ captures the average preference for party j among group g. Because voting is anonymous, we cannot directly observe the average party preferences $\beta^{j,E}$ and $\beta^{j,F}$ of elite and non-elite women. We identify both parameters using variation in group composition across precincts, derived from individual-level directory data. We estimate $\beta^{j,E}$ by exploiting cross-precinct variation in elite female representation prior to the extension of voting rights. $\beta^{j,F}$ captures the average preference of the broader female electorate, including married women, who are not directly observable in the data. Since only widowed women are observable in our data, we exploit the exogenous shift in widowhood caused by World War I as a source of variation in $Female\ Electorate_p$, which enables identification of $\beta^{j,F}$. Male preferences $\beta^{j,M}$ are absorbed by precinct fixed effects under the assumption that they are uncorrelated with the female composition of the electorate; we later validate that these patterns remained stable after enfranchisement.

4.3 Estimating Equation

We exploit a difference-in-differences research design in order to identify the effect of non-widowed women on voting outcomes before and after female suffrage in 1918. Because our 'treatment' is a one-time permanent franchise extension, time heterogeneity and negative weights are not an issue (de Chaisemartin and D'Haultfœuille, 2020; Goodman-Bacon, 2021). While compositional changes are inherent to franchise extension, they are unlikely to vary systematically across precincts.[19] Our main estimating equation is of the following form:

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from (Bühler et al., 2024) as another way of demonstrating that non-widowed women are drawn from the upper tail of the human capital and occupational distribution.

[18]As we later show that female turnout does not differ systematically across precincts, we abstract from group-specific voting propensity in this stylized model.

[19]The issue at hand is that we only observe $\beta^{j,M} Male\ Electorate_p$ prior to extension of franchise. Yet, as Sant'Anna and Xu (2025) discuss the impact of compositional changes only on repeated cross-sections, we argue that as long as precincts evolve similarly before franchise –indicating that preferences were different, but stable– we can extend the parallel trends assumption from men's voting behavior to women's.

$$Vote^j_{p,t} = \beta Share\ Elite_{p,1910} \times \mathbb{I}[t \geq 1918] + \alpha_p + \alpha_t + \varepsilon_{p,t} \tag{Baseline}$$

$$+ \sum_{\tau=1893}^{T=1933} \left[Election\ District_p \times \alpha_\tau + Density_{p,1910} \times \alpha_\tau + OccScore_{p,1910} \times \alpha_\tau \right] \tag{Controls}$$

$$+ \alpha_p \times t + \epsilon_{p,t} \tag{Trend-controls}$$

Our outcome variable, $Vote^j_{p,t}$, is the vote share of a given party j in precinct p and election t. This outcome is regressed on a measure of the pre-existing share of independent, elite women in a precinct, denoted $Share\ Elite_{p,1910}$, defined as the number non-widowed female-led household divided by the number women in the 1910 census. The share of elite women is measured in 1910, eight years prior to both franchise extension and the start of the Weimar Republic, so as to reduce any potential correlation between it and efforts to obtain voting rights.[20]

Our measure of elite women is interacted with a dummy variable that indicates time periods before and after suffrage in 1918; the coefficient β thus identifies changes in voting behavior as a function of exposure to elite women, before and after the extension of voting rights. Our baseline model also includes precinct fixed effects α_p and election-year fixed effects α_t to absorb variation from differences across precincts, e.g. center versus periphery, pre-franchise male voting differences, and across election cycles, e.g. the Great Depression or Hyperinflation.

To increase confidence that our model is plausibly able to isolate the effect of voting rights on voting behavior, we control extensively for pre-existing preferences in each precinct alongside the standard unit- and time-fixed effects. First, we include election-district × election-year fixed effects ($\alpha_t \times ED_p$), so as to control for district-level, time-varying shocks.[21] Second, we construct a measure of pre-existing density in a voting precinct, $Density_{p,1910}$, so as to separate the effect of franchise on elite female voting from its potentially confounding effects on densely populated districts.[22] We also control for pre-existing occupational scores at the precinct level, denoted $OccScore_{p,1910}$ taken from Bühler et al. (2024). Finally, we confine our variation to within precincts over time by controlling for linear precinct-specific trends, denoted ($\alpha_p \times t$). Standard errors, shown as $\epsilon_{p,t}$, are clustered at the precinct level.

Our identifying assumption is twofold: first, that women do not sort into precincts with differential trends in social-liberal preferences. Second, because World War I ended just weeks before franchise extension, it is difficult to separate the impact of women's voting rights from broader political shifts triggered by the conclusion of the War; as such even if our fixed effects account for different baseline levels of political preferences, we also require that these differences do not

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[20] A recent literature on continuous treatment in difference-in-difference application has highlighted the necessity to formulate a generalized parallel trend assumptions across all treatment levels to estimate the valid ATT (Callaway et al., 2024). To alleviate such concerns, we only interpret the sign between the two groups and abstain from a quantitative interpretation of the point estimate.

[21] Munich was divided into two electoral districts in 1912, roughly approximating center and periphery.

[22] This variable, measured in 1910, is defined as the total number of individuals per building in a precinct. Alternative versions where we create a "Female density" yield the same conclusion.

systematically interact with franchise. In our analyses, we confirm that precincts with varying degrees of exposure to elite and non-elite women did not follow diverging trends in the pre-franchise period. Moreover, we explicity control for the time-varying effect of precinct-level exposure to World War I to capture the *differential* impact of the war on voting behavior before and after franchise and find our results are unaffected.

When examining the vote share of the SPD, the various signs that β can take are also informative for identification. For example, if elite women live in left-leaning voting precincts pre-suffrage, there is no reason to expect that the extension of voting would have a *differential* impact on SPD vote shares and $\beta \approx 0$. Moreover, if elite women share the same voting behavior as elite men in their precinct, extending voting rights should have no impact on voting behavior in precincts with more exposure to such women, and hence $\beta \approx 0$. Finally, if elite women have differentially stronger social preferences than already exist in their precinct, then the extension of voting rights should increase SPD vote shares and $\beta > 0$. Lastly, if elite women have more conservative views than men, we expect that $\beta < 0$.

5 Results

In this section we document differences in voting patterns in precincts with differential exposure to elite and non-elite women before and after franchise extension.

5.1 Franchise and Elite Female Voting

We motivate our analysis with a correlational analysis using first differences, examining vote shares for the SPD as a function of men, elite women and non-elite women in a voting precinct. The results are shown in Figure 3.

In Figure 3a, we plot differences in SPD vote shares between the 1912 and 1903 (i.e., pre-franchise) elections, while in Figure 3b we plot differences in SPD vote shares between the 1920 election, the first after female suffrage, and the 1912 election. The differences in vote shares are plotted as a function of either the share of pre-existing (i.e., measured in 1910) male-led households (left panel) or elite female households (center panel). On the right panel, we plot the differences in vote shares as a function of our measure of the broader female electorate, defined as women involuntarily pushed into widow status between 1914 and 1919. Each figure shows the underlying data points (grey circles), binned data (black circles), as well as the correlation line.

Figure 3a indicates that, prior to the extension of voting rights, election results are unrelated to either the share of men, the share of female led households, or the change in female widowhood in each precinct. This lends credence to the assumption that neither men nor women sort into precincts with differential trends in social-liberal preferences. Post-franchise, we observe similar null results for men.

A different picture emerges for women post-franchise. Support for the SPD clearly increases as a function of the share of elite women residing in a district. As the grey circles showing the

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underlying data show, this trend is not driven by outlier precincts; neither does the SPD vote share display extreme values nor does the underlying distribution of the share of elite women. By contrast, precincts with a larger share of widows display patterns directly in the opposite direction, voting significantly less for the SPD after female suffrage.

Together, the results in Figure 3 suggest female suffrage is unrelated to male voting but had a clear, heterogeneous effect on women's voting behavior according to their social and economic status.

5.2 Difference-in-difference estimates

We now report the results of our main estimating equation, using the vote share for parties of the left, center, and nationalist-right as the outcome variable and the share of independently living women as the independent variable to measure elite women's preferences. The results are presented in Table 1, with different outcomes reported in different panels.

In Panel A, we analyze the vote share for the SPD. In column 1, we report a bi-variate model that only includes precinct and election-year fixed effects. We find a positive and precisely estimated effect for the share of independent women in a precinct. The coefficient suggests that a one percentage point increase in the pre-existing share of elite women leads to a 2.3 percentage point increase in the SPD vote share in a given precinct.

Consistent with the evidence from Figure 3, female elites explain a large portion of the variation in SPD vote shares. A precinct at the 75th percentile in elite female representation in 1920 (6.3%), experiences a 10 percentage point higher SPD vote share than a precinct at the 25th percentile in elite representation (2%). This pattern remains robust after the inclusion of female density and female occupational status (column 2), district $\times$ election-year fixed effects (column 3) as well as a full vector of precinct-level linear trends (column 4).

In Panel B, we correlate elite women's preferences with the conservative center party and find positive and precisely estimated coefficients. Given that this party also stood for female voting rights, it is not surprising to see that the share of independent women also increases its vote share. However, as this party also advocated for more conservative and religious views on the role of women for society, the magnitude of the coefficients are substantially smaller in Panel B than they are in Panel A.

In Panel C, we study the vote shares of right-leaning nationalist parties. These parties advocated, among other things, for the return to the monarchy, generally held more traditional gender views and did not support the extension of voting rights to women. Unsurprisingly, we find that the share of elite women in a precinct leads to large, negative decreases for these parties.

Finally, in Panel D, we study the impact of voting rights on turnout and find positive yet mostly imprecise coefficients, suggesting that elite women's enfranchisement did not substantially increase voter participation but instead shifted the average preferences of the electorate.[23]

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[23]Naturally, these estimates are subject to the well-known ecological inference problem popularised by King (2013). This states that we cannot infer individuals' voting preferences from aggregate data. However, applying the solution in

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This evidence suggests that elite women voted for parties that advocated for a continuation of the democratic experiment with the Weimar Republic and for changed norms with regard to women's role in society. These same women opposed parties that fought for more traditional gender norms and a return to the monarchy that suppressed women.

5.3 Difference-in-difference estimates by occupation

Given that the most frequent occupations of elite women (shown in Figure 2) where Rentiers and Buisnessowners, one might expect their economic interests to be better served by liberal parties and not by the SPD which, in addition to fighting for female suffrage, advocated for redistribution, social welfare and stronger workers rights. That precincts with higher shares of elite women voted differentially more for such a working-class party only strengthens the view that the SPD's platform around women's rights was a key determinant that won elite women's vote. Still, one may be concerned that different preferences *within* elite women drive our result.

To this end, we identify the 100 most frequently named occupations of non-widowed household heads in the 1910 directory in order to construct the share of elite women by occupation.[24] We then separately regress the SPD vote share in a precinct on the share of women by occupation using our most demanding specification, including covariates and trend controls.

We present the results for the occupations that generate the five largest point estimates in Figure 4.[25] As shown, the occupations with the largest effects on the SPD vote share include teachers, privatiers and rentiers. Each occupation-specific estimate is indistinguishable from the baseline coefficient that groups all elite occupations together. Importantly, we find large, significant effects for teachers and artists who were instrumental in fighting for female suffrage in women's rights organizations (e.g. *Allgemeiner Deutscher Lehrerinnen Verein*) (Bühler et al., 2024).

These results indicate that the SPD's success among elite women was not driven by any one specific occupation. Instead, they highlight how the SPD's advocacy for gender equality and women's rights played a decisive role in shaping elite women's voting behavior. They also indicate that elite women's support for the SPD was primarily rooted in their political and social values rather than economic interest alone.

5.4 Franchise and the Broader Female Electorate

Next, we use the extension of voting rights to distinguish elite-women's voting preferences from the voting behavior for non-elite women. Specifically, we calculate the share of households headed by a widowed women in a precinct, arguing on the basis of occupational information presented in Figure 2 that this variable is a proxy measure for the preferences of the broader female electorate.

King (2013) based on the identity $SPD\ Share_i = share(men) * \beta^{Men} + (1 - share(women)) * \beta^{Women}$, we calculate voting preferences for men to [0.131,0.196] and independent women to [0.507,1] in Appendix F.

[24]The ten most frequent note occupations in German are: Privatier (2,065), Volksschullehrerin (397), Kleidermacherin (357), Geschäftsinhaberin (298), Damenschneiderin (295), Hebamme (259), Näherin (196), Telephonassistentin (195), Krämerin (183) and Buchhalterin (178).

[25]Point estimates for the 10 largest occupations for elites and non-elites are shown in Figures D.3 and D.4.

An important question regarding this measure is the extent to which widowed women actually represent the preferences of the broader female electorate and not, say, of elderly women. To alleviate this important concern, we identify plausibly exogenous variation in the share of widowed women in a precinct following World War I. By taking the difference in the number of women listed as widows in 1919, immediately following the War, compared to 1914, immediately prior to it, we argue that we capture women involuntarily "pushed" into widowed status.[26] We then compare voting behavior in precincts with differential exposure to the change in the share of widows before and after 1918, arguing that this identifies the preferences of the female majority.

We present the results in Table 2. In columns 1, 4 and 7, we examine party vote shares for the SPD, center party and nationalist parties, respectively. The coefficients suggest that the majority of women vote less for the SPD and center parties and more for nationalist parties, patterns in direct opposition to those generated when examining elite women. The observed pattern is consistent with a reverse-interpretation of Table 1: Precincts with fewer elite women are more representative of the majority and thus vote less for the SPD and more for nationalist parties.

In columns 2, 5, and 8 of Table 2, we also include the 1919 to 1914 change in the share of independent/elite women (non-widows) in a precinct in our regression. As expected, the coefficient on this variable — particularly in columns 5 and 8 — is much smaller and not statistically significant and the coefficient on the change in the share of widows remains unaffected. The inclusion of the 1919 to 1914 change in the share of non-widows serves as an important robustness check to ensure that our difference-in-differences approach does not simply pick up spurious factors affecting broader demographic shifts in this same time period. For example, if our effect for widows reflects other economic shocks before and after the first World War, we would plausibly expect to see significant effects for non-widows as well. The fact that we only observe significant coefficients for widows, and not for non-widows, between 1919 and 1914 validates that our measure isolates changes relevant specifically to widows.

Finally, in columns 3, 6, and 9 we regress the vote shares for the SPD, center and nationalist parties on the change in the share of widows and on our baseline variable of interest, the share of elite women in a precinct. This test directly enables us to compare the preferences of elite and non-elite women. Clearly, the voting patterns of these two types of women are in direct opposition: Whereas precincts with a higher share of elite women vote more for the SPD and center party and less for nationalist parties, precincts with a greater share of widowed women vote differentially less for the SPD and center parties and differentially more for nationalist parties.

5.5 Event study estimates

Causal interpretation of our result relies on the extent to which precincts with differential exposure to elite and non-elite women were comparable to one another. In this section, we we provide

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[26]In addition, as the stock of widows — likely correlating with age — is subtracted, this differenced variable arguably isolates the preferences of the majority of women. Appendix C describes the construction in detail and provides robustness to alternative procedures.

evidence in favor of this assumption. Specifically, we estimate the time-varying effect of precincts' pre-existing share of (a) elite women and (b) women pushed into widow status as a result of WWI to establish the validity of the parallel trends assumption. The results are shown in Figure 5. In the left column of the figure, we plot the coefficient *Share Elite*$_{p,1910}$ × *Year* (using 1912 as the reference) and examine vote shares for the SPD (panel a), center party (panel b), and nationalist parties (panel c). In the right column, we examine the same outcomes but as a function of women pushed into widowed status (hence plotting the coefficient on *Change Widows*$_{p,1919-1914}$ × *Year*, again using 1912 as a reference).

As shown, there are clear post-franchise effects: the share of elite women positively predicts the vote share for the SPD and negatively predicts that of the nationalist parties, while the patterns for widowed women is exactly the opposite, confirming the results presented in Tables 1 and 2. Importantly, there is no evidence of differential trends prior to female suffrage. The pre-period coefficients are all jointly indistinguishable from zero, and all but one are individually insignificant.

6 Robustness

In this section we provide evidence that our results are robust to four sets of additional tests. First, we demonstrate that the patterns are not driven by differential voting behavior among men. Second, we validate that our measure of the broader female electorate at the precinct level does indeed capture the average preferences of women. Third, we show that the results are robust to alternative harmonization procedures of our data across precincts over time. Finally, we show that our result is not driven by particular elections or voting districts; dropping periods of social or economic unrest or city districts does not affect our point estimates.

Preferences of Men: In Table 3, we identify men in the city directories with elite occupations in order to investigate the extent to which the patterns in the data are driven by elite men responding to the extension of voting rights to women. As shown, we find no differential effects before and after franchise when we regress vote shares of any political party on the pre-existing share of elite men in a precinct. This increases confidence that our findings reflect the preferences of women and not those of men responding to suffrage.

Average preferences of women: Our analysis uses precinct-level voting results that combines the votes of both men and women. This precludes us from analyzing the voting preferences of men and women separately. In our main analysis, we proxy the preferences of the broader female electorate by measuring the change in the number of widows. In Online Appendix C.1, we validate this approach by using election results from 1924 which tabulated the votes of men and women *separately*. Although our estimation strategy does not directly translates to a cross-section of gender-separated voting results at the precinct level, we find very similar patterns, increasing

our confidence that our measure does indeed capture female preferences.

Alternative Harmonization Procedures   Our main results are conducted using the 1912 division of Munich into precincts. In order to construct a balanced and harmonized panel, we needed to (i) choose a stable frame of reference and (ii) reconstruct all outcomes for this frame. We chose the 1912 precinct division as it satisfies three criteria: First, it is a division completely unaffected by enfranchisement. Second, its 175 precincts only face small changes during the German Empire and were often split into multiple parts during the Weimar Republic. Third, all addresses continue to exist in the Weimar Republic and new addresses at the periphery are ignored allowing us to abstract from city growth. This creates less measurement error when reconstructing voting results during the Weimar Republic in the frame of German Empire precincts.

In Appendix A, we repeat the analysis using the 1919 precinct divisions, the first precincts designed to incorporate the female electorate, and find very similar results. However, because this requires us to split the voting results of the 175 pre-franchise precincts into 415 post-franchise precincts, this harmonization yields inconsistent standard errors.

Second, we discuss alternative harmonization methods that assign precinct-level voting results to the addresses in our directory data. This is necessary as our voting data comes at the precinct level for each year and contains on average 95 addresses. To harmonize voting results across years, we calculate the expected number of votes every party obtained from each household and address. The resulting assumed vote distribution at the address level is then aggregated to the precincts in 1912.[27]

In our baseline estimates, we calculate the number of votes per address by dividing the number of votes in a precinct by the number of households in that precinct. Multiplying this fraction the with the number of households in each address yields the expected number of votes from each address. Our results are robust to both simplification and sophistication of this process. Neither dividing votes per address instead of the number of households, nor weighting blue collar workers differently than other inhabitants, impacts our results (Appendix A).

Dropping Periods and Districts   Our main results utilize all available data, including periods of economic and political duress. Yet, as the Weimar Republic was beleaguered by economic and social unrest, we are dropping these periods to rule out that we pick up economic voting, rather than the preferences of women. Similarly, as it is common for city districts to reflect social strata, we iteratively drop districts to rule out economic voting and social strata to explain our findings.

We begin Appendix B with dropping periods from our sample. First, even though the 1919 election to the constitutional assembly was the first election would could vote, it was a period of great political uncertainty for women and men alike.[28] Second, we drop the 1924 elections

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[27]This procedure is equivalent to harmonization procedures in the US census with changing county borders. Yet, instead of multiplying outcomes with shares derived from geographic intersections, we utilize the information on addresses and their inhabitants to recalculate vote shares.

[28]Another case could be made to only focus on 1919 as the "true" first election of women. As is evident from Figure

during the Hyperinflation as well as any election after 1930 to avoid the risk of economic duress explaining our result. The results are robust to dropping these periods individually or jointly.

We continue Appendix B by analyzing the stability of our estimated coefficient when dropping one of 26 city districts from our sample. We do so in two steps. First, we estimate our coefficient of interest in a sample dropping one district at a time and find that no omission leads to a significant change in the point estimates. Second, we order our 26 city districts by population and income and successively drop districts by their ranking in their respective distribution until the point estimate is insignificant. Our results indicate that we would need to drop the 15 most populous or 13 richest city districts of Munich to lose significance at the 10-percent level.

We conclude that our effects are not explained by the choice of harmonization of precincts or vote shares, and are not driven by sets of periods or districts.

7 Alternative Hypotheses

In this section, we discuss two alternative explanations to our interpretation on the effects of franchise. First, we explore the extent to which economic loss or social grievance as a result of World War I drive our result. Second, we assess the degree to which our measures of elite and non-elite captures preferences of landowners rather than the *political* preferences of women. Finally, we assess whether our patterns are driven by pre-existing heterogeneity or are indeed a reflection of a backlash dynamic.

7.1 World War I

Given that just weeks separated the extension of voting rights to women in Germany and the end of WWI, an important concern is that the patterns generated in our data may be explained by economic losses and grievances as a result of the War and not by female voting rights. We address this important concern in two ways: First, we exploit WWI casualty lists as a direct measure of exposure to World War I, which we use as a control variable to understand the extent to which *grievance* may explain our finding. Second, we use the 1914 and 1919 city directories to calculate changes in the number of businesses in a precinct which we use to control for *economic losses* due to World War I.

Grievance   In Table 4, we replicate our baseline analysis for widows and non-widows, including a direct measure of the share of households in a precinct exposed to solider losses as a result of WWI. Despite being correlated with the change in widow shares in each precinct,[29] the patterns in the data are unaffected by the inclusion of this important control. The change in widowed women in a precinct continues to negatively predict vote shares for the SPD and center parties while the

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5, only comparing 1912 to 1919 would yield the same conclusion as comparing all elections.

[29] A cross-sectional regression of the change in widows on losses generates an F-test of 8.87 with controls. The same regression with the share of non-widowed women generates an F-test of only 0.04.

share of elite women in a precinct continues to display positive and significant patterns for the SPD and center parties and negative patterns for nationalist parties. The coefficient on war losses is itself mostly indistinguishable from zero, suggesting little direct effect of the war on electoral outcomes. Interestingly, the loss coefficient positively predicts vote share for nationalist parties, without diminishing the effect of the share of elite women (Table 4, column 6). This might reflect the emphasis of such parties on issues such as strong national defense and identity — issues likely to resonate in areas with greater exposure to wartime losses.

Economic Losses   Next, in Table 5, we assess the extent to which economic losses caused by World War I affect our results. As the war not only killed husbands and sons, but also affected household income, it is possible that our results measure the effects of local economic changes rather than the preferences of women. We thus approximate economic change after the war by measuring the change in the number of available businesses located in a precinct between 1919 and 1914. As shown, the inclusion of this control does not affect the coefficients on elite and non-elite women in any way. Interestingly, the coefficient on economic changes is itself insignificant, suggesting that changes in local economic activity did not affecting voting behavior differentially before or after franchise.[30]

7.2   Landlords and tenants

Our city directory data is rich enough that we are able to identify the gender of a homeowner and, in the case of female owners, we are able to distinguish whether she is the owner or the spouse of the owner. We use this information to distinguish whether our results are driven by a landlord's preferences about their tenants, or whether our results are in fact driven by tenants voting as a result of female suffrage. Landlords in the early 19th century had considerable power to whom they rented their apartments, and thus it could be that landlords targeted different types of people as tenants — e.g. elite women. In this case, our estimated effect would not be the preferences of the women per se, but also reflect the preferences of the landlord for a certain type of tenant. If that landlord lives in another building or city, we falsely attribute the landlords preferences to the women living in the apartments, when in reality the treatment effect is driven by selection preferences of landlords.[31]

In our data, there are two types of homeowners: individuals (men or women) and institutions. We define female ownership as homes which are solely owned by women; if the women is listed as the wife of another owner, we define this house as male owned. Examples of institutions and associations that owned homes include the 'Verein Für Verbesserung der Wohnungsverhältnisse' [The Association for the Improvement of Living Standards] (32 Houses) or the 'Bau- u. Sparverein

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[30]Our measure of changes in local business aggregates all businesses together. In Online Appendix F.2, we disaggregate local businesses by type (i.e., changes in the number of bakeries, butchers, barbers, and tobacco stores, and others) and find similar results.

[31]Another potential bias could arise when elite women are more likely to own houses and thus show up more frequently in our data. For that reason we drop owners from our sample.

des bayer. Eisenbahnerverbandes' [Building and Savings Association of the Bavarian Railway Association] (11 Houses). These associations typically aimed at owning homes as a means of improving living standards for families.

Using this information, we able to study the effects of home-ownership on voting, which we present in Table 6. In column 1, we reproduce our baseline estimates that show the differential effect of the pre-existing share of elite women on a precincts vote shares for the SPD, center and nationalist parties (panels A, B and C, respectively). In column 2, we examine the same outcomes but as a function of pre-existing female home ownership in a district. As shown, the coefficients are of the same sign as those presented in column 1 and are estimated with some precision but they are around 60 to 80 percent smaller. This suggests that areas with greater pre-existing share of female home ownership display similar voting patterns as areas with greater exposure to elite women, but less pronounced. In column 3, we study voting behavior as a function of institutional home-ownership and find little effects.

Finally, in column 4, we study the effect of elite women on voting outcomes, controlling for home-ownership structure in a precinct. As shown, the inclusion of female or institutional home-ownership does not diminish the predictive power of the share of elite women on voting outcomes. As in the baseline, areas with differentially greater exposure to elite women vote significantly more for the SPD and center parties and significantly less for nationalist parties. This suggests that elite women, independent of home-ownership, drive voting behavior.

7.3 Backlash or underlying heterogeneity

An important alternative hypothesis concerns the source of the observed divergence in political outcomes. While we interpret these patterns as consistent with a backlash dynamic—where the extension of political rights triggered a conservative response from non-elite women—an alternative explanation is that the divergence reflects pre-existing heterogeneity in political preferences within the female electorate. In this view, the enfranchisement of women did not generate a political realignment; it exposed pre-existing heterogeneity in political preferences. Distinguishing between these interpretations is difficult: our estimates reflect group-level composition, not individual voting behavior, and no data are available from before enfranchisement.

We distinguish between backlash and underlying heterogeneity using sex-disaggregated vote shares from the 1924 election. If pre-existing heterogeneity explains the divergence, we would expect a uniform shift in party support — e.g., women are on average more conservative. In contrast, if female support for nationalist parties increases with non-elite female presence, relative to male voting behavior, this pattern aligns with a backlash dynamic. Figure 6 plots the relationship between wartime widowhood and the difference in party vote shares between women and men. Positive values indicate greater female support; negative values indicate greater male support.

The gray scatter plot in Figure 6 shows that female support for the Zentrum party was higher than male support across precincts. On average, women were approximately 10 percentage points more likely to vote for Zentrum than men. Yet, in precincts with more non-elite women, fe-

male support for the Zentrum party declines relative to male support. This pattern is consistent with contemporary accounts suggesting that elite women underestimated the centrality of religion and traditional family structures in the lives of most women (Sandmann-Bremme, 1956; Sneeringer, 2002). If the divergence reflected only pre-existing gender-based heterogeneity, the gender gap would be stable across precincts. Its systematic variation with female composition suggests within-group divergence, aligning with a backlash interpretation.

In contrast to the pattern observed for the Zentrum party, there is no average gender gap in vote shares for nationalist parties. However, as non-elite female presence rises, female support increases relative to male support, indicating systematic within-group divergence. This pattern is difficult to reconcile with a simple gender-based preference heterogeneity and aligns with a backlash interpretation.

8   Social capital

Political preferences are not formed in isolation but shaped by social environments, where interpersonal interactions transmit or reinforce prevailing social norms and cultural attitudes. In contexts of institutional change, such as the extension of voting rights, newly enfranchised groups do not necessarily adopt the preferences of reformist elites. Instead, cultural persistence—the slow-moving influence of entrenched social norms—may dominate when mechanisms for social learning and political exposure are weak or absent (Bisin and Verdier, 2001; Alesina and Giuliano, 2015; Giuliano and Nunn, 2021). Social capital—conceived as the structure of informal networks—can weaken such cultural resistance by enabling the diffusion of new political ideas and fostering deliberation, especially when leveraged by political movements (Satyanath et al., 2017). In this section, we examine whether local variation in social capital influenced the extent to which non-elite women resisted or converged toward the political preferences of elite women. We test whether the presence of social gathering places—such as inns, churches, clubs and associations, and schools—moderated the observed divergence in voting behavior between elite and non-elite women. Among these various venues, we focus in particular on inns as key sites of informal interaction and political discourse, where political ideas could circulate beyond the constraints of traditional social hierarchies.

To do so, we use the 1910 city directory and identify the presence and frequency of inns as a key predictor of informal social interactions.[32] Inns served as hubs for social exchange, political meetings, and public speeches, making them natural sites for political persuasion and norm transmission. By contrast, the absence of inns likely reflects more socially isolated environments in which traditional norms and cultural attitudes may have persisted more strongly.

In Table 7 we report a fully-saturated model in which the number of inns is interacted with franchise and our measures for elite and non-elite women. The coefficients on the share of elite and

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[32]Inns are recorded in the directories under the terms 'Gasthaus,' 'Gaststätte,' or 'Gasthof' and include restaurants, bars, taverns and hotels.

non-elite women remain unchanged.However, the coefficient on the triple interaction term suggests that in precincts with greater social capital, the divergence in voting patterns between elite and non-elite closes, with non-elite women voting significantly more in the direction of elite women. At the mean number of inns, for example, the point estimate on the coefficient for non-elite women is almost halved: Whereas the majority in precincts without social gathering possibilities votes 1.839 percentage points more for nationalist parties, they only vote 1.015 percentage points more nationalist in precincts with the average number of inns.[33]

Importantly, however, we do not find these patterns for other measures of social capital. When using churches, clubs and associations, and the number of schools, we do not find any such mediating effects (see Tables F.4 to F.6). This suggests that it is not the mere presence of social capital that facilitates political convergence, but specifically those forms of social capital that foster political discussion and deliberation.

9 Conclusion

Our analysis sheds new light on the nuanced effects of female suffrage in early 20th-century Germany, emphasizing the importance of understanding heterogeneity in political preferences among newly enfranchised groups. Political enfranchisement can reveal—not mitigate—latent ideological divisions within underrepresented groups: while elite women were more likely to support social-liberal parties advocating for gender equality, the broader female electorate exhibited a preference for conservative parties emphasizing traditional roles. These results highlight the potential for enfranchisement to yield divergent political outcomes when socioeconomic divisions among voters are pronounced.

The broader implications of these findings underscore the complex interplay between enfranchisement and representation. While the extension of voting rights to women marked a transformative step toward inclusion in democratic institutions, our evidence suggests that representation of diverse political preferences is critical for enfranchisement to strengthen democratic governance. When political systems fail to address the preferences of the broader electorate, they risk creating disconnects that can be exploited by populist or extremist movements — a pattern observed not only in Germany but also in other European democracies of the era (Levitsky and Ziblatt, 2018).

The case of Germany demonstrates how enfranchisement, without effective representation, can contribute to instability, particularly in the face of economic and social upheaval. By contrast, countries like Belgium (1936), Finland (1929) and Sweden (1933), which faced similar pressures, illustrate the importance of political coalitions that prioritize institutional stability and inclusion over short-term gains. These lessons remain relevant today, as democracies especially in the West continue to grapple with how best to integrate and represent increasingly diverse populations.

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[33]We compare the point estimate in the first row to the linear combination: 'Change in Widows $\times$ Franchise' + 'Change in Widows $\times \mu \times$ Social Capital $\times$ Franchise' + '$\mu \times$ Social Capital $\times$ Franchise', where μ denotes the mean number of inns: 6.3.

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10 Figures

Figure 1: Selected election posters (1920)

(a) SPD   **(b)** Zentrum   **(c)** DVP

These election posters are from the 1920 election of the Weimar Republic. The left shows the poster of the SPD (social democratic party) promoting equality between men and women (*Same Rights=Same Duty*). The center poster shows the Zentrum (christian-conservative party) asking *"Who saves the Christian mothers children?"* The right shows a poster of the German People's Party (DVP) promoting women as mothers, saving the future of their children.

Figure 2: Most frequent female occupations by widow status

Most frequent female occupations in 1910
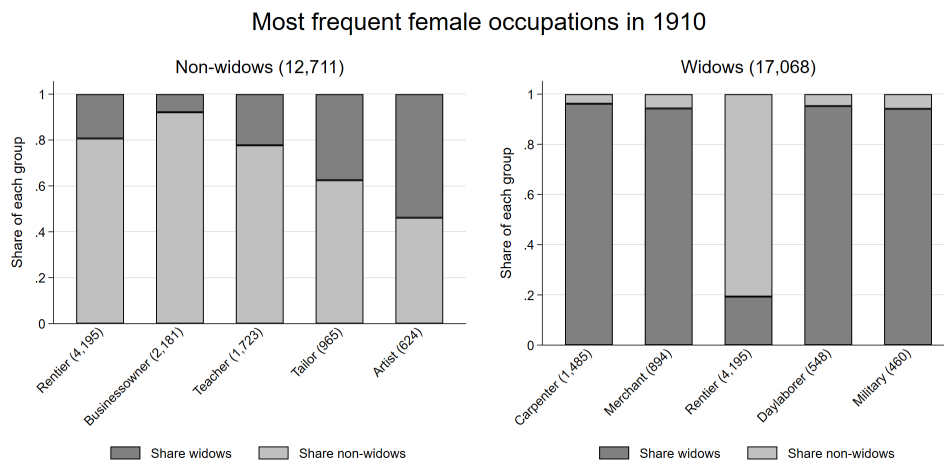
This figure separately plots the five most frequent occupations for the 12,711 widows and 17,068 non-widows in 1910, as labeled. The occupation of widowed women reflects that of their deceased husband. The number in parentheses is the total number of women (widow and non-widow combined) who hold a given occupation. The bars therefore show the number of widowed or non-widowed women as a share of total women per occupation. For example, of the 4,195 female rentiers (i.e., non-working women who live off assets and inheritance), 80 percent (3,384) are non-widows and 20 percent (811) are widows.

Figure 3: Within-precinct comparison of Reichstag elections: SPD results

(a) 1912 v. 1903

(a) 1920 v. 1912
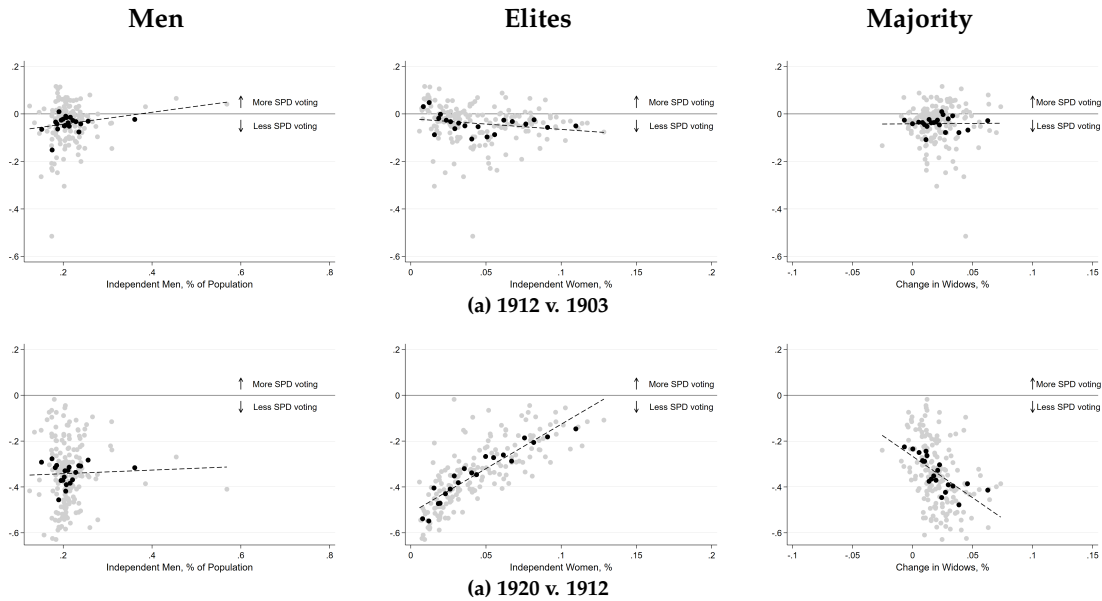
This figure plots the first differences for each precinct between the 1912 and 1903 election (top row) as well as 1920 and 1912 (bottom row) against the share of men listed as 'head of household' in 1910 (left), non-widowed women listed as household heads (middle), and the change in widows as household heads between 1919 and 1914 (right). The grey dots show each of the 175 voting precincts while the black dots show the same data but when grouped into equal sized bins.

Figure 4: Women's voting preferences
Standardized coefficients by occupation
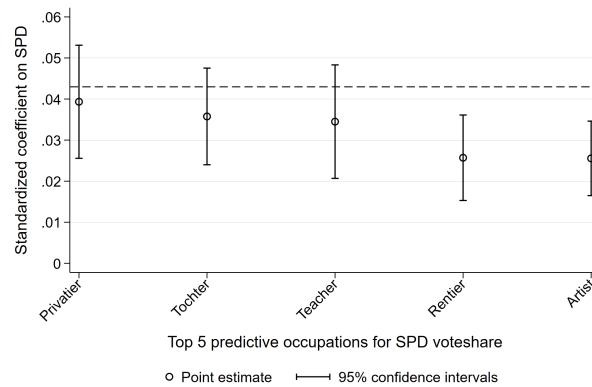
Standardized coefficients from our main Difference-in-Differences specification. We report the five largest point estimates along its recorded occupational group. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. The regression includes precinct and year fixed effects, election-district times year fixed effects, average residential density and occupational scores for women in 1910, interacted with year fixed effects, and a precinct-linear trend. The dashed line represents the standardized baseline coefficient. 95%-confidence intervals shown.

Figure 5: Voting preferences of the elite and majority
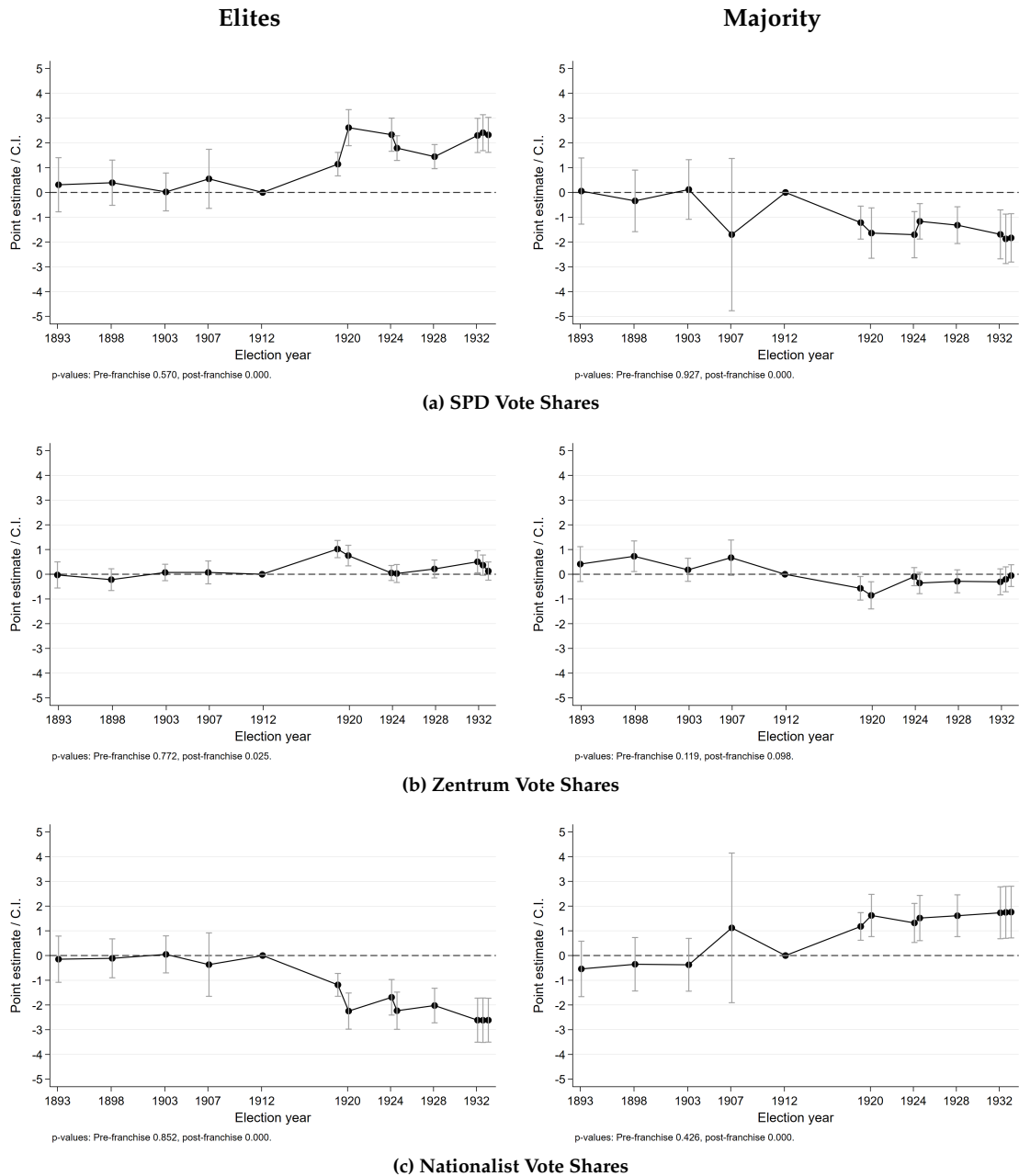
Elites   **Majority**

p-values: Pre-franchise 0.570, post-franchise 0.000.   p-values: Pre-franchise 0.927, post-franchise 0.000.

(a) SPD Vote Shares

p-values: Pre-franchise 0.772, post-franchise 0.025.   p-values: Pre-franchise 0.119, post-franchise 0.098.

(b) Zentrum Vote Shares

p-values: Pre-franchise 0.852, post-franchise 0.000.   p-values: Pre-franchise 0.426, post-franchise 0.000.

(c) Nationalist Vote Shares

This figure plots the event-study graphs for SPD, centre, and nationalist vote shares, for elites and majority, respectively. The regression includes precinct and year fixed effects, election-district times year fixed effects, average residential density and occupational scores for women in 1910, interacted with year fixed effects, and a precinct-linear trend. 95%-confidence intervals shown. p-values pre-franchise test for joint-significance of the leads 1893–1907. p-values post-franchise test for joint-significance of the lags 1919–1933. The standard errors are larger in 1907 as we are missing data on the second electoral district.

Figure 6: Backlash or underlying heterogeneity
Within-precinct comparison of Reichstag elections

Conservative Centrum

Nationalist Parties
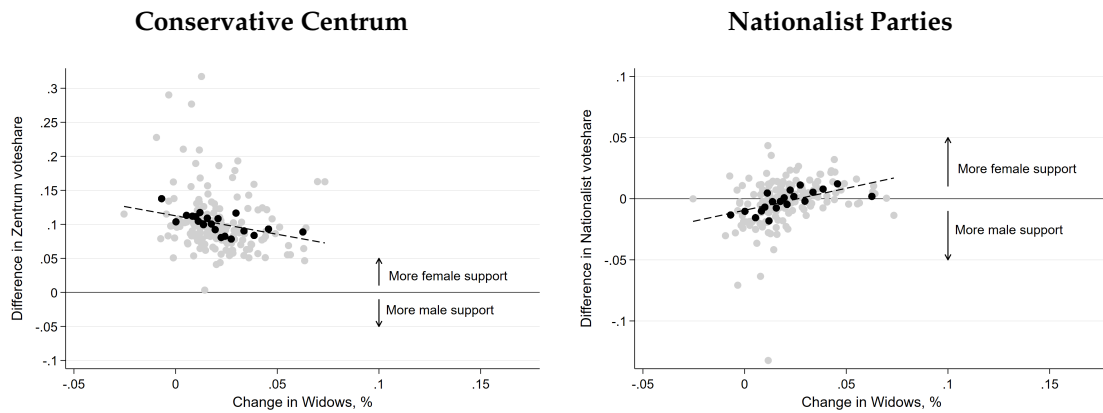
This figure plots the gender-gap for each precinct between men and women for the conservative center (left) and nationalist parties (right) against the change in widows as household heads between 1919 and 1914. The grey dots show each of the 175 voting precincts while the black dots show the same data but when grouped into equal sized bins. The correlation in the left figure is -0.543; in the right figure 0.359.

Table 1: Elite women's voting preferences

	(1)	(2)	(3)	(4)
Panel A: SPD				
Share Elite × Franchise	2.332***	1.951***	1.846***	1.544***
	(0.162)	(0.246)	(0.267)	(0.264)
Panel B: Conservative Center (Zentrum)				
Share Elite × Franchise	0.777***	0.371**	0.418**	0.788***
	(0.107)	(0.172)	(0.176)	(0.188)
Panel C: Nationalist				
Share Elite × Franchise	-3.020***	-2.305***	-2.080***	-1.190***
	(0.161)	(0.264)	(0.273)	(0.227)
Panel D: Turnout				
Share Elite × Franchise	0.092	-0.186	-0.027	0.240
	(0.079)	(0.161)	(0.148)	(0.178)
Covariates		Yes	Yes	Yes
Election District × Year			Yes	Yes
Linear Trend				Yes
Observations	2,128	2,128	2,128	2,128

Main results using a difference-in-differences setup. All regressions include a full set of precinct and election-year fixed effects. *Share Elite × Franchise* denotes the share of women listed as non-widowed heads of household in the 1910 directory, interacted with a post-treatment dummy when women obtained franchise. We consider four outcomes: The vote shares of the social democratic party (Panel A, SPD), conservative center parties (Zentrum), and nationalist parties (Panel C), as well as turnout in Panel D. Column (2) adds election mean density, and occupational status of women in 1910, interacted with election-year fixed effects. Column (3) adds election district fixed effects interacted with election-year fixed effects. Column (4) adds a linear, precinct-specific, trend to the main equation. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Women's voting preferences

	SPD			Zentrum			Nationalist		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Majority of Women:									
Change in Widows × Franchise	-0.952***	-1.197***	-0.338	-0.829***	-0.879***	-0.560**	1.024***	1.040***	0.584**
	(0.357)	(0.408)	(0.306)	(0.249)	(0.321)	(0.233)	(0.272)	(0.322)	(0.240)
Elite Women:									
Change in Elites × Franchise		0.736			0.151			-0.050	
		(0.609)			(0.431)			(0.526)	
Share Elite × Franchise			1.505***			0.659***			-1.077***
			(0.263)			(0.193)			(0.229)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vote share (German Empire)	0.544	0.544	0.544	0.210	0.210	0.210	0.239	0.239	0.239
Vote share (Weimar Republic)	0.253	0.253	0.253	0.248	0.248	0.248	0.080	0.080	0.080
Mean change in widows	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Mean change in elites		0.006			0.006			0.006	
Mean share elite women			0.046			0.046			0.046
Observations	2,092	2,092	2,092	2,092	2,092	2,092	2,092	2,092	2,092
Adjusted R2	0.955	0.955	0.957	0.838	0.838	0.840	0.926	0.926	0.928

Main results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three outcomes: The vote shares of the social democratic party, conservative center parties (Zentrum), and nationalist parties. Average vote shares during the German Empire and Weimar Republic are listed below. We consider three explanatory variables, all interacted with franchise. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between 1914 and 1919, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean change in widows*: 2%. *Change in Elites* calculates the increase in the share of non-widowed women listed as household heads between 1914 and 1919, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean change in non-widows*: 0.6%. *Share Elite* calculates the share of non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean share elite women*: 4.6%. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. The number of observations decrease due to growing precincts between 1910 and 1914 creating outliers in the baseline number of widows. See Appendix C for a discussion. Standard errors clustered by precinct shown in parentheses. $* p < 0.10, ** p < 0.05, *** p < 0.01$

Table 3: Men's voting preferences

	SPD	Zentrum	Nationalists	Turnout
	(1)	(2)	(3)	(4)
Share Elite Men × Franchise	0.125	-0.035	0.061	0.109
	(0.089)	(0.057)	(0.075)	(0.105)
Covariates	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes
Observations	2,116	2,116	2,116	1,942

Results using a difference-in-differences setup analysing potential underlying trends. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We calculate the share of non-widowed men listed as household heads, relative to the number of men listed as living in this precinct 1910. Voting outcomes are the vote shares of the social democratic party (SPD), conservative center parties (Zentrum), nationalist parties, and Turnout. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. The number of observations differ due to lack of election district 2 in 1907 and missing turnout information in 1932. Standard errors clustered by precinct shown in parentheses. $* p < 0.10, ** p < 0.05, *** p < 0.01$

Table 4: The impact of World War I: Grievance

	SPD		Zentrum		Nationalist	
	(1)	(2)	(3)	(4)	(5)	(6)
Majority of Women:						
Change in Widows × Franchise	-0.795**		-0.779***		0.864***	
	(0.362)		(0.240)		(0.282)	
Elite Women:						
Share Elite × Franchise		1.535***		0.784***		-1.181***
		(0.261)		(0.186)		(0.220)
War Grievance:						
WWI Losses × Franchise	-1.579	-1.503*	-0.500	-0.641	1.613	1.499**
	(1.314)	(0.843)	(0.579)	(0.413)	(1.011)	(0.649)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes
Vote share (German Empire)	0.544	0.544	0.210	0.210	0.239	0.239
Vote share (Weimar Republic)	0.253	0.253	0.248	0.248	0.080	0.080
Mean change in widows	0.020		0.020		0.020	
Mean share elite women		0.045		0.045		0.045
Average losses during WWI	0.027	0.027	0.027	0.027	0.027	0.027
Observations	2,092	2,128	2,092	2,128	2,092	2,128

Results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three outcomes: The vote shares of the social democratic party, conservative center parties (Zentrum), and nationalist parties. Average vote shares during the German Empire and Weimar Republic are listed below. We consider three explanatory variables, all interacted with franchise to capture elite women's preferences, the preferences of the majority, as well as the effect of war grievances. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between 1914 and 1919, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean change in widows*: 2%. *Share Elite* calculates the share of non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean share elite women*: 4.5%. *WWI losses* calculates the average loss per address. The mean is given by *Mean losses during WWI*: 2.7%. *First-stage* shows the f-test from the cross-sectional regression with controls of the *Change in Widows* or *Share Elite* on *WWI losses*. It shows that war losses predict changes in widows, but are unrelated to the share of elite women in 1910. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. $* \, p < 0.10$, $** \, p < 0.05$, $*** \, p < 0.01$

Table 5: The impact of World War I: Economic losses

	SPD		Zentrum		Nationalist	
	(1)	(2)	(3)	(4)	(5)	(6)
Majority of Women:						
Change in Widows × Franchise	-0.925**		-0.776***		1.025***	
	(0.356)		(0.254)		(0.276)	
Elite Women:						
Share Elite × Franchise		1.596***		0.763***		-1.239***
		(0.266)		(0.180)		(0.229)
Economic losses:						
Economic Changes × Franchise	-0.002	0.003	-0.004	-0.002	-0.000	-0.003
	(0.006)	(0.006)	(0.003)	(0.002)	(0.004)	(0.004)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes
Vote share (German Empire)	0.544	0.544	0.210	0.210	0.239	0.239
Vote share (Weimar Republic)	0.253	0.253	0.248	0.248	0.080	0.080
Mean change in widows	0.020		0.020		0.020	
Mean Share Elite women		0.045		0.045		0.045
Mean change in #stores	0.886	0.869	0.886	0.869	0.886	0.869
Observations	2,092	2,128	2,092	2,128	2,092	2,128

Results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three outcomes: The vote shares of the social democratic party, conservative center parties (Zentrum), and nationalist parties. Average vote shares during the German Empire and Weimar Republic are listed below. We consider three explanatory variables, all interacted with franchise to capture elite women's preferences, the preferences of the majority, as well as the effect of economic losses during the war. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between 1914 and 1919, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean change in widows*: 2%. *Share Elite* calculates the share of non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean share elite women*: 4.5%. *Economic Changes* calculates the relative change in the number of stores in 1914 (1,628) and 1919 (2,548) per precinct. The mean change is given by *Mean change in #stores*: a 64.9% increase. Alternative measures of economic change in Appendix . The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. $* p < 0.10, ** p < 0.05, *** p < 0.01$

Table 6: Landlord's influence over tenant structure

	(1)	(2)	(3)	(4)
Panel A: SPD				
Share Elite × Franchise	1.544***			1.598***
	(0.264)			(0.291)
Share Female Owner × Franchise		0.145		-0.050
		(0.100)		(0.098)
Share Owned by Social Association × Franchise			0.015	0.035
			(0.174)	(0.166)
Panel B: Zentrum				
Share Elite × Franchise	0.788***			0.709***
	(0.188)			(0.187)
Share Female Owner × Franchise		0.172**		0.078
		(0.066)		(0.063)
Share Owned by Social Association × Franchise			-0.049	-0.019
			(0.039)	(0.038)
Panel C: Nationalist				
Share Elite × Franchise	-1.190***			-1.124***
	(0.227)			(0.241)
Share Female Owner × Franchise		-0.211***		-0.067
		(0.077)		(0.075)
Share Owned by Social Association × Franchise			0.040	0.005
			(0.047)	(0.043)
Covariates	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes
Observations	2,128	2,128	2,128	2,128

Results using a difference-in-differences setup. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three explanatory variables, all interacted with franchise. Column (1) calculates the share of all non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. Column (2) calculates the share of houses owned by women in this precinct 1910 (14%). Column (2) calculates the share of houses owned by social associations in this precinct 1910 (1.8%). We consider three outcomes: The vote shares of the social democratic party (Panel A, SPD), conservative center parties (Panel B, Zentrum), and nationalist parties (Panel C). The unit of observation is a precinct. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: The impact of social capital

	SPD		Zentrum		Nationalist	
	(1)	(2)	(3)	(4)	(5)	(6)
Majority of Women:						
Change in Widows × Franchise		-1.588**		-1.808***		1.839***
		(0.653)		(0.555)		(0.562)
Elite Women:						
Share Elite × Franchise	0.710*		0.923***		-1.170***	
	(0.379)		(0.328)		(0.385)	
Interaction with social Capital:						
× Social Capital × Franchise	0.141**	0.130*	-0.032	0.148**	0.010	-0.139**
	(0.056)	(0.069)	(0.048)	(0.063)	(0.051)	(0.057)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,128	2,092	2,128	2,092	2,128	2,092
Linear combination of estimates $\hat{\delta}$	1.514	-0.833	0.725	-0.908	-1.089	1.015
p-value of $\hat{\delta}$	0.000	0.000	0.001	0.004	0.000	0.000

Results using a triple-difference-in-differences setup analysing social capital as a mediating channel. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. Social capital is measured by the number of local pubs as meeting places in 1912. The average precinct contains 6.3 pubs. 'Change in Widows × Franchise' + 'Change in Widows $\times \mu \times$ Social Capital × Franchise' + '$\mu \times$ Social Capital × Franchise', where μ denotes the mean number of pubs. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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This appendix provides additional evidence supporting our main hypothesis that finishing schools contributed to the emergence of the German women's rights movement. We cover the following topics:

A Alternative harmonization

Any comparison of election results over time requires a constant spatial reference. In our main results we chose to use 1912 as a frame of reference, giving us 175 precincts in two electoral districts. This early time also implies that streets or addresses constructed between 1912–1920, will not be part of our analysis. We only compare addresses that lie within the original 175 precincts and existed in 1912. In this section we show that our results are robust to changing this spatial-reference frame to 1919, as well as show that different party harmonization procedures yield the same conclusion as our baseline estimates.

A.1 Replication with 1919 precinct boundaries

In this Appendix we replicate the analysis with the precincts from the election to the first national council in 1919 as a spatial reference. While this election precedes the Weimar Republic, it was also the first election in which women were allowed in. The election was held on January 19th, only than 2 months after the November Revolution ending the German Empire and World War I. Due to this short time frame, only 5 parties competed in Munich: SPD, DVP, BVP, DDP, and USPD, with all 'right-wing' parties missing. As female suffrage was decided on November 30th, no party except the SPD had a working women's wing. The only party with some success in attracting the bourgeois women's rights movement was the DDP, which was however shocked by the low vote share it gained from women (Sneeringer, 2002).

   Yet, despite the short time frame, German bureaucracy managed to redistrict Munich. As every poll station, and thus every precinct, was to collect the votes of around 1,000 people, the Munich city administration increased the number of precincts to 377. This means that for post-WWI we now have 377 observations of Munich but less for the period of the German Empire: 370 in 1912, 347 in 1903, and 318 in 1898. 1907 is, as before, a special case as we only have election results for the core of the city and thus for 117 precincts.

Table A.1: The impact of women's franchise on voting patterns
Using 1919's precincts

	SPD		Zentrum		Nationalist	
	(1)	(2)	(3)	(4)	(5)	(6)
Elite Women:						
Share Elite × Franchise	1.261***		0.834***		-0.917***	
	(0.199)		(0.113)		(0.152)	
Majority of Women:						
Change in Widows × Franchise		-0.397***		-0.315***		0.332**
		(0.151)		(0.108)		(0.132)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes
Vote share (German Empire)	0.535	0.535	0.209	0.209	0.249	0.249
Vote share (Weimar Republic)	0.251	0.251	0.249	0.249	0.081	0.081
Mean share elite women	0.045		0.045		0.045	
Mean change in widows		0.031		0.031		0.031
Observations	4,420	4,384	4,420	4,384	4,420	4,384
Adjusted R2	0.938	0.940	0.779	0.783	0.903	0.904

Main results using a difference-in-differences setup. All regressions include a full set of precinct and election-year fixed effects. *Share Elite × Franchise* denotes the share of women listed as non widowed heads of household in the 1910 directory, interacted with a post-treatment dummy when women obtained franchise. We consider three outcomes: The vote shares of the social democratic party (Panel A, SPD), conservative center parties (Zentrum), and nationalist parties (Panel C), as well as Turnout in Panel D. Column (2) adds election mean density, and occupational status of women in 1910, interacted with election-year fixed effects. Column (3) adds a linear, precinct-specific, trend to the main equation. The unit of observation is a precinct-election year. Precincts are normalized to the 377 precincts of 1919, using an exact address-polling station assignment. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.1: The impact of women's franchise on voting patterns // Using 1919's precincts
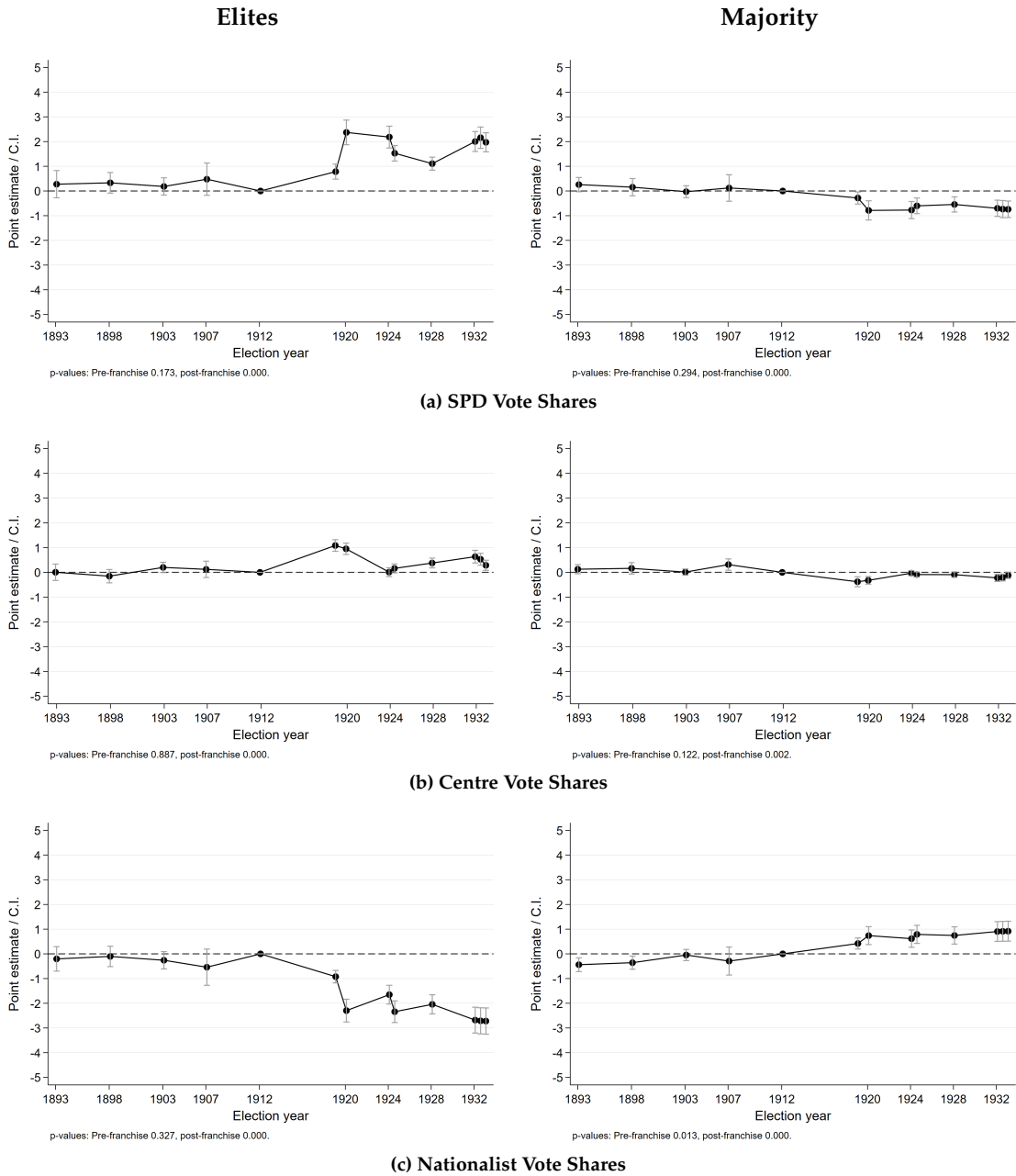
Elites   **Majority**

p-values: Pre-franchise 0.173, post-franchise 0.000.   p-values: Pre-franchise 0.294, post-franchise 0.000.

(a) SPD Vote Shares

p-values: Pre-franchise 0.887, post-franchise 0.000.   p-values: Pre-franchise 0.122, post-franchise 0.002.

(b) Centre Vote Shares

p-values: Pre-franchise 0.327, post-franchise 0.000.   p-values: Pre-franchise 0.013, post-franchise 0.000.

(c) Nationalist Vote Shares

This figure plots the event-study graphs for SPD, centre, and nationalist vote shares, for elites and majority, respectively. The regression includes precinct and year fixed effects, election-district times year fixed effects, average residential density and occupational scores for women in 1910, interacted with year fixed effects, and a precinct-linear trend. 95%-confidence intervals shown. p-values pre-franchise test for joint-significance of the leads 1893–1907. p-values post-franchise test for joint-significance of the lags 1919–1933.

A.2 Replication with alternative address harmonization procedures

Next we discuss different harmonization procedures to aggregate our results to a common frame of reference. For our main results, we need to convert election results at the precinct-election year level to a constant spatial frame of reference. We do so in two simple steps:

1. In a given election-year (e.g., 1924), assign each address the expected vote share of its precincts as a fraction of the total.

2. Aggregate address-level election results to the target precinct (e.g., 1912) to compare addresses over time.

This process is similar to the geographic harmonization typically applied to US census data, where county borders change over years. In the US setting, a typical harmonization step involves calculating which share of county A lies in county B, and apply that factor to the variable of interest. Using our much richer data, we instead use the actual addresses and observe the precinct this address has been assigned to over the years.

Breaking down precinct-level election results to the address-level implies taking a stance on how voting behavior varies within precincts. Here, we present three assumptions and validate that our main results hold.

Voting by density In our main results, we assume that the number of households living in an address is a sufficient statistic to explain within precinct voting patterns. Specifically, we calculate vote shares of party j in address a of precinct p as:

$$Vote_{j,a,p}^{D} = Vote_{j,p} \times \frac{HH_a}{\sum_{a \in p} HH_a}$$

In this harmonization procedure, addresses a with more households contribute more votes to party j in precinct p. It is easy to see that $\frac{HH_a}{\sum_{a \in p} HH_a} \in (0,1)$ and sums up to one. Also, $\sum_{a \in p} HH_a$ should be highly correlated in pre-franchise years with the recorded electorate in precinct p. For 1912, the correlation is 0.969, with the mean number of Households (864.9) closely matching the size of the electorate in precincts (787.7).

Voting by address One might worry that introducing socio-economic status into the harmonization process might skew the empirical setting towards finding a result. Assuming that addresses with higher density –and thus likely poorer households on average– vote more for a given party (e.g., SPD), and then finding this result might then not be surprising. We alleviate such concerns by simply aggregating by the number of addresses a in precinct p.

$$Vote_{j,a,p}^{A} = Vote_{j,p} \times \frac{\mathbb{I}_a}{\sum_{a \in p} \mathbb{I}_a}$$

Here, the number of addresses a in precinct p determine how vote results are assigned to addresses. Socio-economic characteristics are –if not correlated with the number of addresses per precinct– are ignored.

Voting by socio-economic status   Yet, one might also consider the opposite and explicitly model socio-economic status into the harmonization process. Since we're using the social democratic party as a baseline, we do so by upweighting the number of blue-collar workers BC in each address:

$$Vote_{j,a,p}^{BC} = Vote_{j,p} \times \frac{HH_a + 2 \times BC_a}{\sum_{a \in p} (HH_a + 2 \times BC_a)}$$

Here, two addresses with the same number of households HH_a are assigned different voting results if they differ in their socio-economic composition. Addresses with more blue-collar workers get –on average– more votes than addresses with fewer.

Franchise adjusted   The final adjustment concerns franchise. When we assign voting results to addresses in our base line 'voting by density', we assume each household has one vote to cast. Yet, as women could not vote prior to franchise, any household led by women could, by definition, not vote. We thus adjust our baseline measure in pre-franchise years by calculating the share of male-led households instead of all households.

The results in Table A.2 remain unaltered by changing the harmonization procedure. Correcting for franchise in columns (7) & (8) increases the stability of our estimates. In addition, since almost all pre-franchise periods are insiginificant (Figure A.2), we conclude that the baseline significance of pre-periods was likely driven by fictitiously giving female-led households as much political weight as male-led households.

Figure A.2: The impact of women's franchise on voting patterns
Using alternative voting aggregation methods
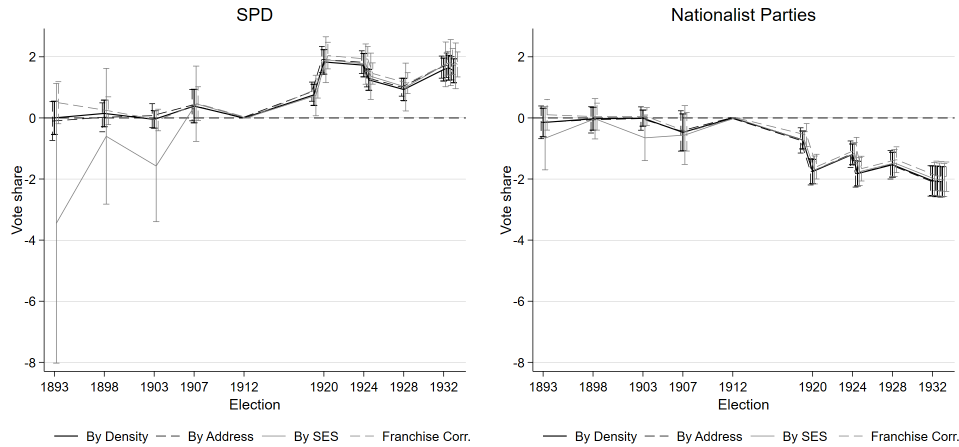
Difference-in-Differences figure relating the share of independent noted as non-widowed head of household in the 1910 directory to voting outcomes for the social democratic party (SPD, left) and nationalist parties (right). The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912.The regression includes precinct and year fixed effects, election-district times year fixed effects, as well as average residential density and occupational scores for women in 1910, interacted with year fixed effects. 95%-confidence intervals shown.

Table A.2: The impact of women's franchise on voting patterns
Using alternative voting aggregation methods

	By Density	By Address	By SES	Franchise Corr.
	(1)	(2)	(3)	(4)
Panel A: SPD				
Share Elite × Franchise	1.544***	0.853*	1.344***	1.565***
	(0.264)	(0.471)	(0.274)	(0.259)
Panel B: Conservative Center (Zentrum)				
Share Elite × Franchise	0.788***	0.322	0.760***	0.807***
	(0.188)	(0.290)	(0.189)	(0.194)
Panel C: Nationalist				
Share Elite × Franchise	-1.190***	-1.697***	-1.202***	-1.142***
	(0.227)	(0.403)	(0.264)	(0.249)
Covariates	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes
Observations	2,128	2,128	2,128	2,128

Results using a difference-in-differences setup. All regressions include a full set of precinct and election-year fixed effects. *Share Elite × Franchise* denotes the share of women listed as non widowed heads of household in the 1910 directory, interacted with a post-treatment dummy when women obtained franchise. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three outcomes: The vote shares of the social democratic party (Panel A, SPD), conservative center parties (Zentrum), and nationalist parties (Panel C). The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.3 Harmonization of parties

For our main results, we harmonize our results to ensure common support across all elections. We are following the following scheme, where our variable *Nationalists* combines the votes for Liberal-conservatives and national conservatives; that is, votes against the parties supporting the Weimar Republic.

Table A.3: Party Composition Over Various Elections

Block								Election Year:						
	1893	1898	1903	1907	1912	1919	1920	1924	1924 (2nd)	1928	1932	1932 (2nd)	1933
Social Democratic Party:													
	SPD	SPD	SPD	SPD	SPD	SPD	SPD	SPD	SPD	SPD	SPD	SPD	SPD
Center Conservative:													
	Z	Z	Z + cs	Z	Z	BVP	BVP	Z + BVP	BVP	BVP	BVP +CSV	BVP	BVP + CSV
Non-Center Parties:													
Liberal-conservatives	-	DtVP	DtVP	-	Liberal	DDP + DVP	DDP + DDP	DVP	DVP + NLP WP	DVP+DDP	DVP+DDP + WP	DVP	DVP + DSP
National-conservatives	NLP	NLP + List Schwarz	NLP	NLP	konservativ	-	-	-	-	-	-	BBMB	-
Right Wing	-	-	-	-	-	-	Braun Kahl	DNVP + DVB	DNVP + DVB	NSDAP + DNVP VNP + VRPD	NSDAP + DNVP	NSDAP + DNVP +RM	NSDAP + KFSWR
Communist	-	-	-	-	-	USPD	KPD + USPD	KPD + USPD	KPD + USPD	KPD + USPD	KPD	KPD	KPD

Figure A.3: Harmonization of Parties

Election results
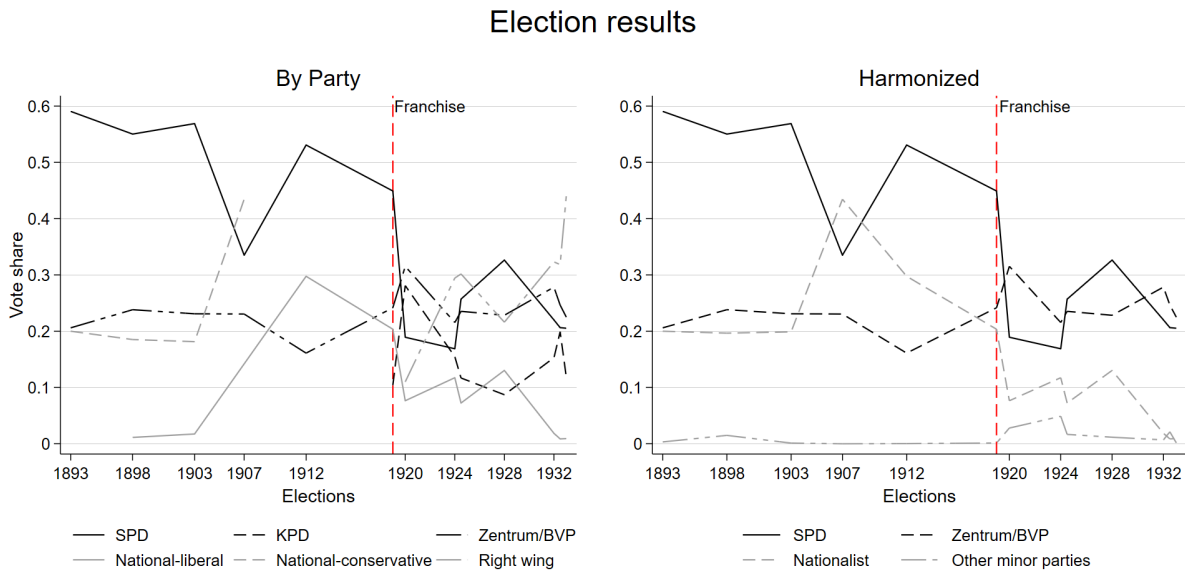
Harmonization of parties. Right-Wing parties omitted in the right panel as they are not part of the main analysis.

Table A.4: The impact of women's franchise on voting patterns
Differences in household status

	LIB + NLP		+ Right wing		+ Right wing and KPD	
	(1)	(2)	(3)	(4)	(5)	(6)
Elite Women:						
Share Elite × Franchise	-1.190***		-0.822***		-2.279***	
	(0.227)		(0.214)		(0.323)	
Majority of Women:						
Change in Widows × Franchise		1.024***		0.806***		1.732***
		(0.272)		(0.289)		(0.455)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes
Vote share (German Empire)	0.239	0.239	0.239	0.239	0.239	0.239
Vote share (Weimar Republic)	0.080	0.080	0.330	0.330	0.482	0.482
Observations	2,128	2,092	2,128	2,092	2,128	2,092
Adjusted R2	0.928	0.926	0.938	0.937	0.942	0.938

Auxilliary results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three outcomes, all related to Non-Center Parties. Columns (1) and (2) are the baseline estimates using liberal-conservative and national conservative parties. Columns (3) and (4) add right-wing parties, columns (5) and (6) add right-wing parties and the communists. We consider two explanatory variables, all interacted with franchise. *Share Elite* calculates the share of non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. The mean is 4.6%. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between the German Empire and 1919, relative to the number of women listed as living in this precinct 1910. The mean is 3.5%. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.4 City growth and harmonization

Harmonizing the data to the precincts of 1912 also has the advantage of abstracting from city growth during that period. By focusing on the core of Munich in 1912, we can abstract from large changes in population and urbanization of the periphery and focus on aggregating rather than splitting observations.

Figure A.4 makes this point using four key indicators. In the top left, we show how the number of households of munich grow steadily from 75.000 in 1893 to more than 250,000 by 1933 (cirled line). Yet, focusing on the boundaries of Munich in 1912, the number of households peak at 170.000 in 1924, while closely following the actual number of households before franchise. Population growth is thus roughly held constant over time.

The following three figures then highlight how the number of addresses (top right), households (bottom left) and electorate (bottom right) evolve within precincts, always contrasting the harmonized 1912 boundary (solid circle) to the raw non-harmonized data (hollow circle). The number of addresses in each precinct decreases by almost 50% following franchise – consistent with trying to hold constant the number of people in each polling station. The number of addresses remains constant for the 1912 precinct boundaries at 83.

Whereas the number of households and electorate are pre-franchise smaller in the 1912 precincts (as precincts were slightly larger), a gap opens after franchise. Whereas the average precinct in 1920 contains 600 households and 1,300 voters, the harmonization using the 1912 precinct division continues to have 900 households and 1,500 voters.

In sum, Figure A.4 shows that precincts using the 1912-division contain *on average* more households, addresses, and voters, than the actual precincts used during the Weimar Republic. This suggests that our harmonization is more conservative than alternatives, as it aggregates information, rather than splitting it, and abstracts from city growth outside the 1912 boundaries. Using later boundaries would, as shown in Appendix A.1, yield similar coefficients and smaller –incorrect– standard errors.

Figure A.4: Harmonization of Munich
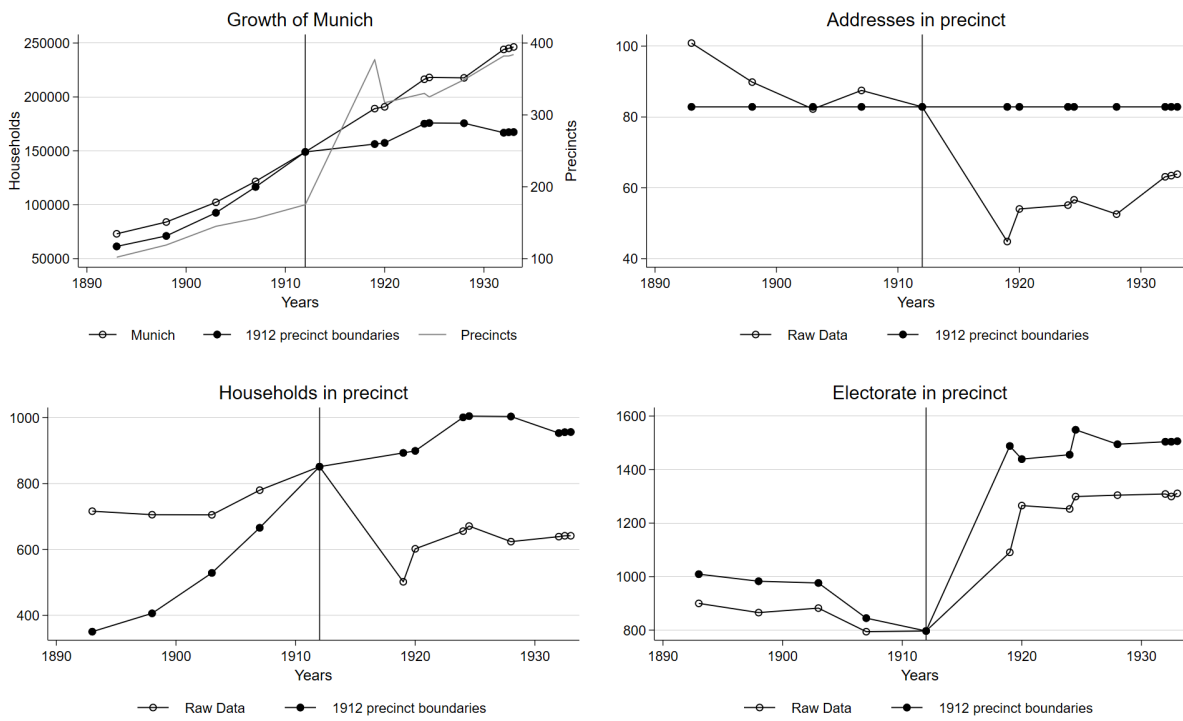
Average statistics by precinct and year Solid circles represent the 1912 precinct division, hollow circle the actual precincts in that year.

B Socio-economic status and economic crises

In this appendix we show robustness and sensitivity of our main findings to systematically dropping events or districts from our sample. If any historically significant event (e.g. hyperinflation) or district (e.g. Schwabing as a communist bastion) are correlated with the socio-economic status of individuals, we may mistake the effect of economic crises or underlying district-level trends for the observed differences in preferences.

We begin by replicating our main results without the constitutional assembly (1919), the Great Depression (1930-), and the Hyperinflation (1924). The results in Table B.1 suggest that our effects are not driven by any particular period of the troubled Weimar History. Instead, our findings were immediately present in 1919 and did not emerge during the rise of the Nazis.

Second, we begin to analyze city districts. Every city is eiter formally or informally split into districts: New York has Upper East Side and Greenwich Village, London has Notting Hill or the West End. In Munich, there existed a clear political stigma to districts: While Lenin resided in Schwabing (left), Albert Einstein lived in Isarvorstadt (Center-conservative), Thomas Mann lived in Bogenhausen (Liberal-right). In contrast to precincts that change every year, city districts remain relatively stable across centuries and thus their unique name continues to resonate with the Munich population.

We assign each address in 1910 to its respective city-district as given in the 1910 directory. Aggregating each address to the 1912 precincts by majority rule, we can distribute our 175 precincts into 26 city districts.[34] In Figure B.1 we provide evidence that our results are not driven by one of the 26 city districts. Dropping each city district from the sample, we show that the point estimates are completely stable across all districts.

To alleviate concerns that our results are explained by the richest, poorest, or most dense areas of Munich, we drop districts consecutively in Figure B.2. In the left panel, we sort the data by the most densely populated city district (27,532 Inhabitants in 1910), and then procede to drop the next largest districts until the point estimate is insignificant. For the impact on SPD, dropping the largest or richest 20 city-districts jointly does not render the coefficient insignificant at the 5% level. A similar pattern emergest for the other parties, where we would have to discard more than half of the data to obtain point estimates that are no longer significant.

Finally, Table B.2 shows that the point estimates remain stable even when controlling for co-variates, 2 election districts, and 26 city-districts interacted with election-year fixed effects *and* precinct-level linear trends. Even in this extremely saturated regression, our measure of elite women explains 3.6% of the within-fixed effects variation of SPD votes. We conclude that our finding is not explained by periods of unrest or the richest, poorest or most dense, districts of Munich.

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[34]101 precincts can be exactly merged to one of 26 city districts. 65 precincts are assigned to city districts because the majority of their streets indicate the same city district. The remaining precincts are assigned based on largest fraction of streets indicating the same city district (6), or, if the largest fraction is equal (3), the last entry alphabetically.

Table B.1: The impact of women's franchise on voting patterns
Dropping periods of unrest from our sample

	(1)	(2)	(3)	(4)
Panel A: SPD				
Share Elite × Franchise	1.544***	2.124***	1.894***	1.819***
	(0.264)	(0.359)	(0.409)	(0.406)
Panel B: Conservative Center (Zentrum)				
Share Elite × Franchise	0.788***	0.376	0.844***	0.958***
	(0.188)	(0.233)	(0.239)	(0.242)
Panel C: Nationalist				
Share Elite × Franchise	-1.190***	-1.655***	-1.489***	-1.497***
	(0.227)	(0.323)	(0.331)	(0.331)
Covariates	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes
Without Nationalversammlung		Yes		
Without Great Depression			Yes	Yes
Without Hyperinflation				Yes
Observations	2,128	1,953	1,603	1,253

Main results using a difference-in-differences setup. All regressions include a full set of precinct and election-year fixed effects. *Share Elite × Franchise* denotes the share of women listed as non widowed heads of household in the 1910 directory, interacted with a post-treatment dummy when women obtained franchise. We consider three outcomes: The vote shares of the social democratic party (Panel A, SPD), conservative center parties (Zentrum), and nationalist parties (Panel C), as well as Turnout in Panel D. Column (2) adds election district fixed effects, mean density, and occupational status of women in 1910, interacted with election-year fixed effects. Column (3) adds city district fixed effects interacted with election-year fixed effects. Column (4) adds a linear, precinct-specific, trend to the main equation. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure B.1: The impact of women's franchise on voting patterns
Dropping city districts one-by-one
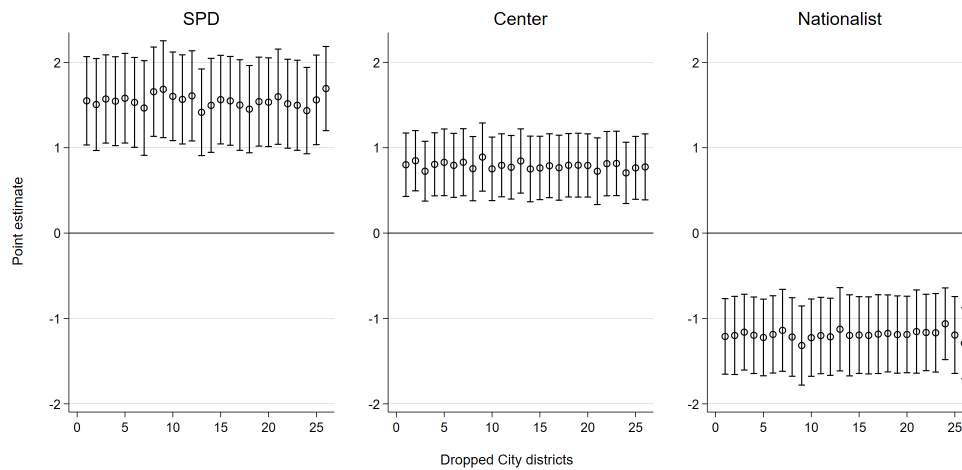
The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. The regression includes precinct and year fixed effects, election-district times year fixed effects, a linear precinct-specific time trend as well as average residential density and occupational scores for women in 1910, interacted with year fixed effects. 95%-confidence intervals shown.

Figure B.2: The impact of women's franchise on voting patterns
Dropping the largest and richest districts consecutively
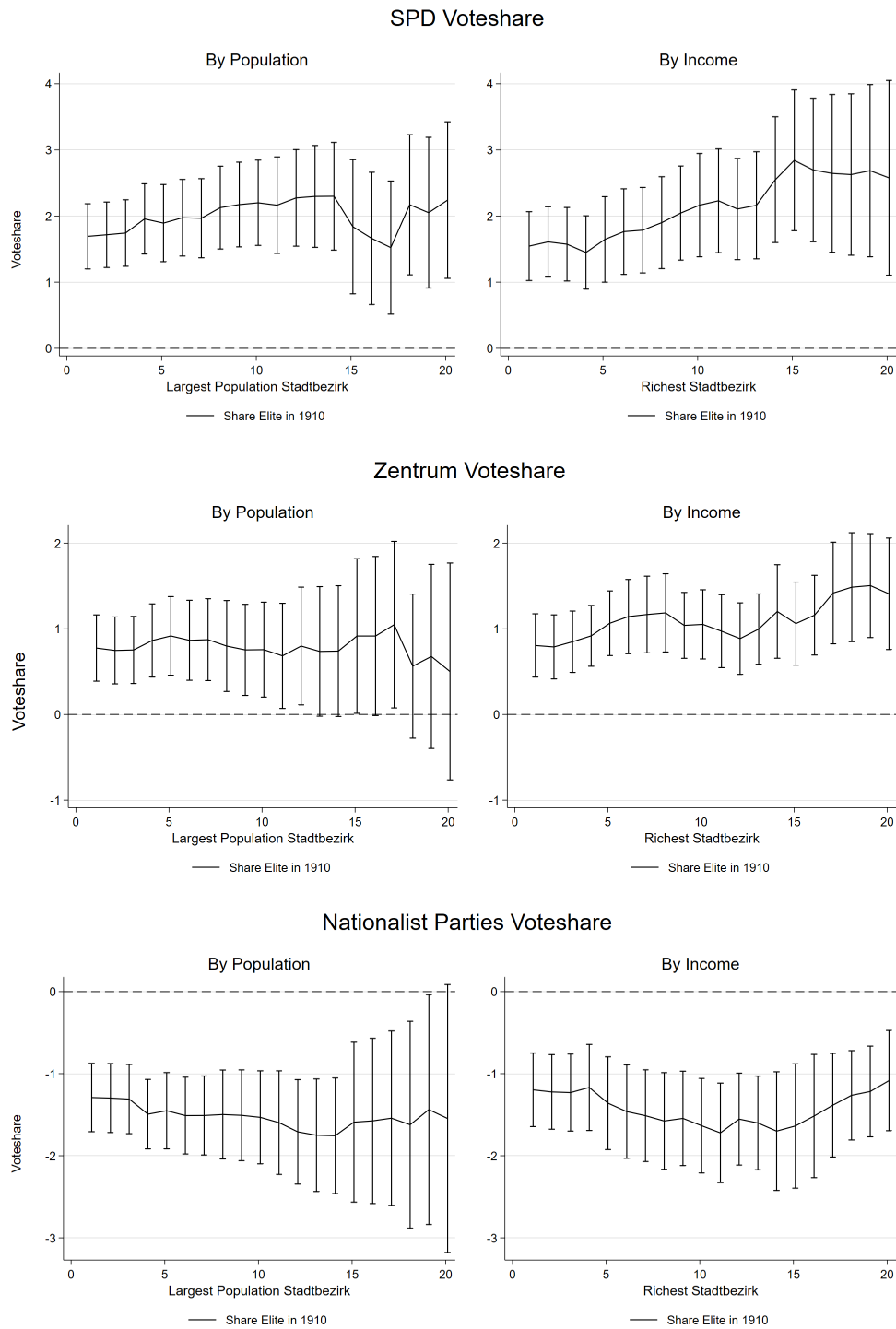
SPD Voteshare

Zentrum Voteshare

Nationalist Parties Voteshare

The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. The regression includes precinct and year fixed effects, election-district times year fixed effects, a linear precinct-specific time trend as well as average residential density and occupational scores for women in 1910, interacted with year fixed effects. 95%-confidence intervals shown.

Table B.2: The impact of women's franchise on voting patterns
Adding city-district fixed effects

	SPD		Zentrum		Nationalist	
	(1)	(2)	(3)	(4)	(5)	(6)
Independent Women:						
Share Elite× Franchise	1.668***		0.552***		-1.145***	
	(0.350)		(0.210)		(0.309)	
Women on Average:						
Change in Widows × Franchise		-0.623		-0.727***		0.837**
		(0.395)		(0.222)		(0.322)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes
City District × Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,128	2,092	2,128	2,092	2,128	2,092
Adjusted R2	0.965	0.963	0.856	0.858	0.942	0.941
Within R2	0.036	0.003	0.008	0.010	0.022	0.008

Auxilliary results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects, a linear, precinct-specific, trend to the main equation and include 26 city district by year fixed effects. *Share Elite* calculates the share of non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between the German Empire and 1919, relative to the number of women listed as living in this precinct 1910. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Adjusted R2 reported alongside the within fixed effects R2 in the last rows. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

C Classifying the Majority

In this appendix we first detail how we isolate the preferences of the majority from the change in widows between 1914 and 1919 before conducting several sensitivity analyses.

We begin by calculating how the share of widows is exogenously shifted by the First World War.

$$\frac{\#Widows_{p,1919} - \#Widows_{p,1914}}{\#Women\ in\ Census_{p,1910}}$$

We plot its distribution in Figure C.1, which is heavily skewed towards two precincts. These lie in election district 2, precincts 90 (+22%) and 48 (+12%), and have seen the greatest growth rates in the number of households. Precinct 90 grew from 84 households in 1907 to 980 in 1919, precinct 48 from 154 to 1432. Their population in 1910 were 394 and 1001 women respectively, representing the lowest and sixth lowest number of women in our data.

Figure C.1: Distribution of the change in widows across precincts
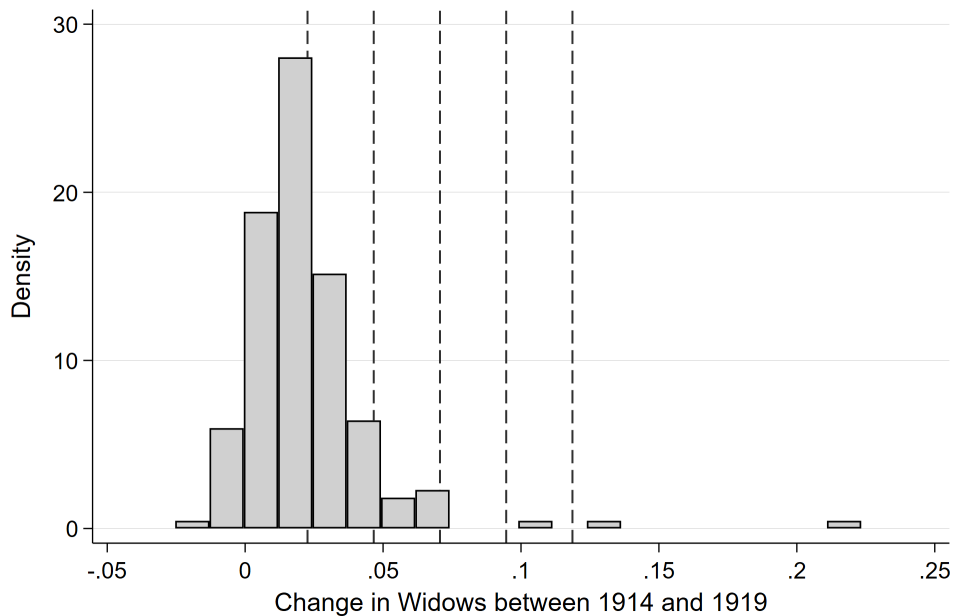
The unit of observation is a precinct year. Vertical lines represent (from left to right): mean, 1 standard deviation, 2 standard deviations, 3 standard deviations, 4 standard deviation.

As both the baseline period (1914) and the denominator are extremely low, these districts represent the two right-most outliers in the distribution. To account for these outliers, we drop every precinct that sees changes in widow growth that are more than 3 standard deviations away from the mean in our main specification. In Table C.1, this represents the second column. We then show, how this choice affects the point estimates by increasing (or reducing) this inclusion criteria in terms of standard deviations from the mean. Across columns (1)-(4), the point estimate remains stable within one standard error of the baseline estimate, even though we drop between 2 and 14

precincts. In column (6), we then simply estimate a binary variable for an above mean change in widows, and show that our findings are robust to a simple binary treatment identifier.

Table C.1: The impact of women's franchise on voting patterns
Analyzing the majorities' shares

	<4 SD	<3 SD	<2 SD	<1 SD	all	Above Mean
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: SPD						
Change in Widows × Franchise	-0.726**	-0.952***	-1.009***	-0.923	-0.328	-0.026*
	(0.362)	(0.357)	(0.375)	(0.566)	(0.218)	(0.014)
Panel B: Conservatives						
Change in Widows × Franchise	-0.707***	-0.829***	-0.901***	-1.323***	-0.302	-0.023***
	(0.235)	(0.249)	(0.256)	(0.333)	(0.250)	(0.008)
Panel C: Nationalist						
Change in Widows × Franchise	0.752**	1.024***	1.075***	1.186***	0.322	0.031***
	(0.334)	(0.272)	(0.284)	(0.409)	(0.235)	(0.010)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
City District × Year	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,104	2,092	2,080	1,960	2,128	2,128
Mean change in widows	0.021	0.020	0.020	0.018	0.023	0.377
Dropped precincts	2	3	4	14	0	0

Results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three explanatory variables, all interacted with franchise. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between 1914 and 1919, relative to the number of women listed as living in this precinct 1910. Column headers (1)-(5) list the inclusion criteria to be within the sample. Column (5) lists the treatment identifier. The mean is given by the bottom row *Mean change in widows*. We consider three outcomes: The vote shares of the social democratic party, conservative center parties (Zentrum), and nationalist parties. Average vote shares during the German Empire and Weimar Republic are listed below. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. The number of observations decrease due to dropping outlier precincts visible in Figure C.1. The number of dropped precincts is given in the last row. Standard errors clustered by precinct shown in parentheses. $* \ p < 0.10, ** \ p < 0.05, *** \ p < 0.01$

Finally, we show in Figure C.2, that World War I is indeed an outlier in the distribution and thus presents an exogenous shock. Every circle is the change in widow share constructed as described above between this year's directory and the previous. While the pre-war change hovered around 1%, and the post war change around 0%, increase - World War I increased widowhood by 2% compared to the 1914 directory.

Figure C.2: Evolution of change in widows across directories
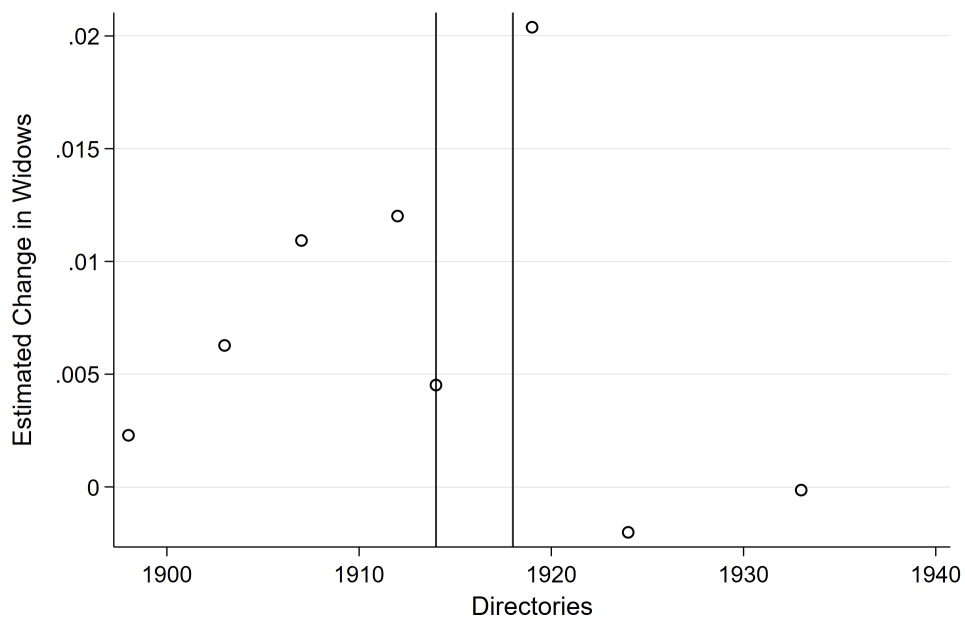
The unit of observation is a precinct-year. Vertical lines represent the period of the First World War.

C.1   Voting differences between women and men

In this subsection we present supporting evidence that our measure for the majority, the change in widows, captures the preferences of the broader female electorate. To do so, we gained access to election data at an unprecedented detail for Munich: In 1924, records survived that tabulated the votes for men *and women* separately for *each precinct*. This is the first time that such data from that period has been uncovered and used in an analysis.

While the level of detail is unprecedented - and allows us to separate women's preferences from men's, any analysis remain correlational as gender is not exogenously assigned. In addition, a comparison with pre-franchise preferences is impossible, as women could not vote.

To ensure comparability with our main results, we restrict the spatial extend of Munich in 1924 to all addresses in 1912 and recalculate all voting results in the precincts of 1912.[35] Figure C.3 reports the differences between men and women at the precinct level. While communist parties get 19 percentage points from men –and only 12 from women– conservative parties get 12 percentage points more votes from women than from men.

Finally, we transform the cross-sectional gender-separated results for 1924 to create a pseudo panel for 175 precincts listing men's and women's vote separately. That allows us to estimate the average difference between men and women per precinct. Interacting this binary variable with the share of elites we estimate the differences in preferences between the majority and the elites; identified by 'Share Elites' in our main results. The results in Table C.2 support our initial conclusion.

Overall, the observed cross-sectional patterns are consistent with the observed pattern using our definition of majority that allows us to compare voting results before and after franchise was extended. Thus, the evidence supports our claim that our measure 'changes in widow' captures the preferences of the female majority.

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[35]This ensures that city growth does not influence our results.

Figure C.3: How women vote differently than men
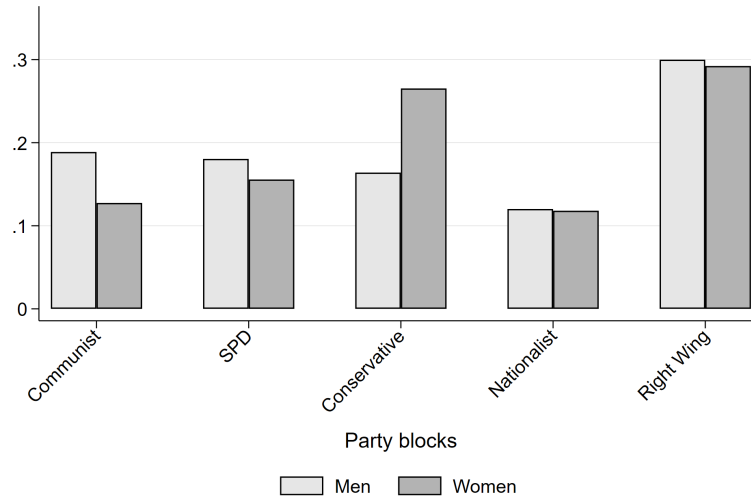
(a) 1912 precincts

Average differences between men and women per precinct in May 1924.

Table C.2: Female voting patterns
Cross-Section in 1924

	Center-Left		Zentrum		Nationalist	
	(1)	(2)	(3)	(4)	(5)	(6)
Majority of Women:						
Women's vote	-0.097***	-0.097***	0.088***	0.088***	0.008***	0.008***
	(0.004)	(0.005)	(0.005)	(0.008)	(0.002)	(0.003)
Elite Women:						
Share Elite in Precinct	-3.881***		0.443***		1.545***	
	(0.239)		(0.098)		(0.127)	
Share Elite × Women's Vote	0.240***	0.240***	0.308***	0.308**	-0.222***	-0.222***
	(0.063)	(0.089)	(0.106)	(0.150)	(0.054)	(0.077)
Precinct fixed effects		Yes		Yes		Yes
Observations	350	350	350	350	350	350
Number of fixed effects		174		174		174
Vote share (Men)	0.369	0.369	0.164	0.164	0.120	0.120
Vote share (Women)	0.283	0.283	0.265	0.265	0.118	0.118
Adjusted R2	0.650	0.984	0.606	0.814	0.399	0.962

Results using cross-sectional gender-separated results for 1924. Each column represents a separate regression. Even columns include precinct fixed effects. We consider three explanatory variables: A binary variable *Women's vote* indicating the gender difference between average men and women in precinct p. *Share Elite in Precinct* indicating the differences in voting patterns across precincts driven by the underlying composition of the electorate. *Share Elite × Women's Vote* interacts *Share Elite in Precinct* with the binary variable *Women's Vote* to identify how elite women vote differently than the majority. We consider three outcomes: The vote shares of the center-left parties (SPD and KPD), conservative center parties (Zentrum), and nationalist parties. Average vote shares for men and women denoted below. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

D   Occupations of widows and non-widows

In Table 2, we show that widows and non-widows have a distinctly different voting preferences. In this appendix we provide evidence to substantiate this claim. We establish four key insights:

1. Women from each group are drawn from almost completely distinct occupations. (Figure D.1)

2. Within the most frequent occupations of each group, widows represent the majority in the top 10 widowed occupations, and non-widows in the top 10 non-widowed occupations. (Figure D.2)

3. The largest coefficients for the non-widowed group are comparable to the largest coefficients for widows, and vice versa. (Figures D.3 & D.4)

4. Comparing within the same address, non-widowed women have a higher occupational score than widows.

In reality the occupational difference are likely larger than the socio-economic difference. In the widowed group the occupation is not the occupation of the women, but rather the occupation of the deceased husband. Hence, if we assume positive assortative matching, widows have an *even* lower occupation than is recorded.

Figure D.1: Histogram of occupations
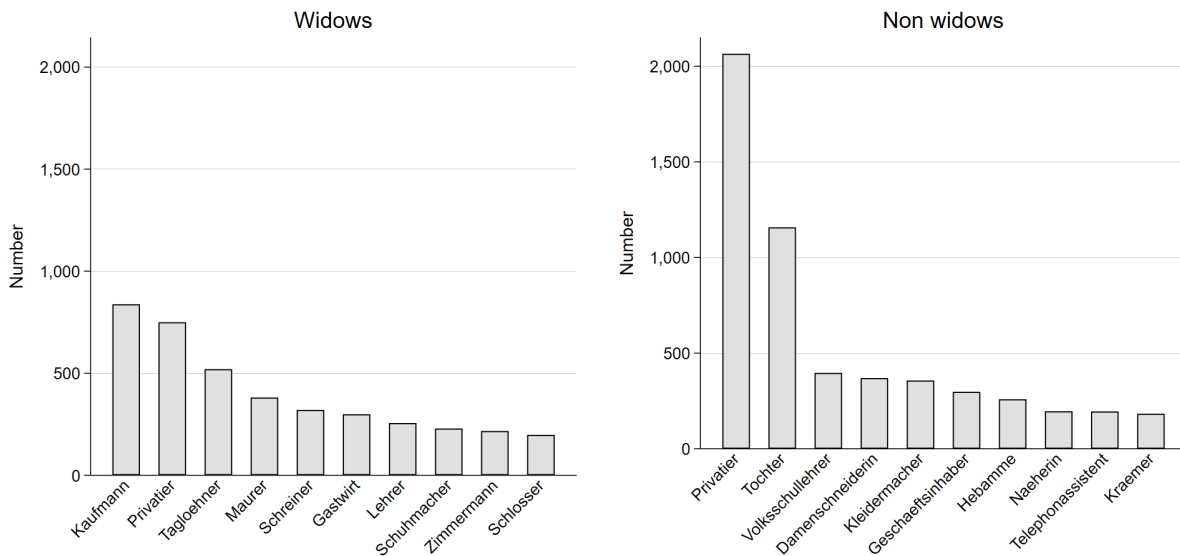
Comparing the ten most frequent occupations of widows and non-widows in 1910. These are the actual recorded occupations, as opposed to the grouped occupations shown in Figure 2.

Figure D.2: Share of widows and non-widows in their respective top occupations

Most frequent occupations
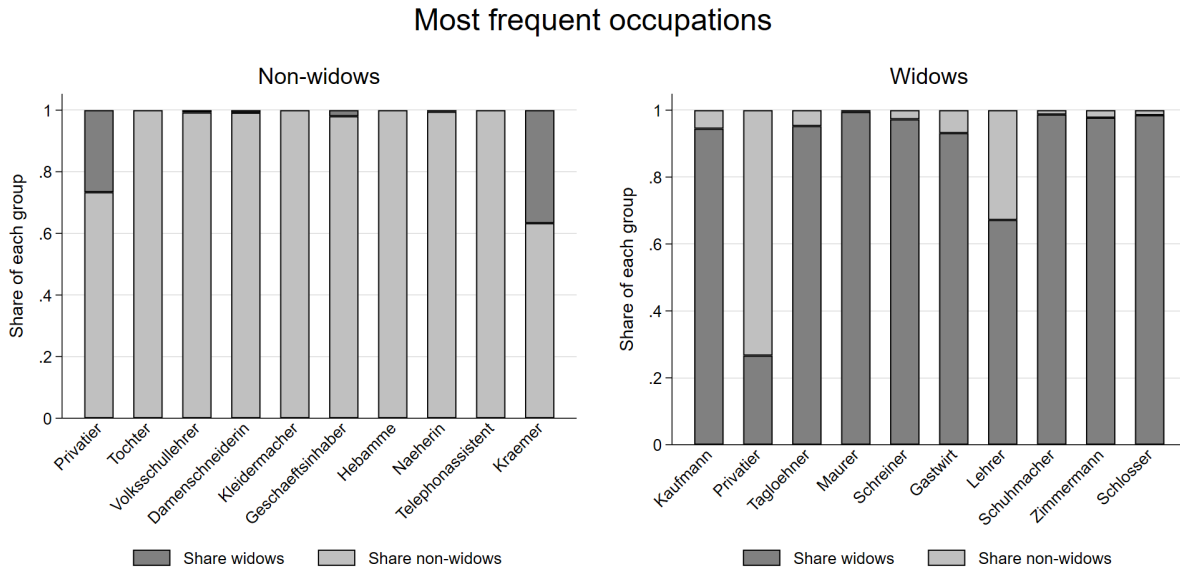
Comparing the ten most frequent occupations of widows and non-widows in 1910 in relative terms. These are the actual recorded occupations, as opposed to the grouped occupations shown in Figure 2.

Figure D.3: Largest and smallest coefficients for non-widowed women
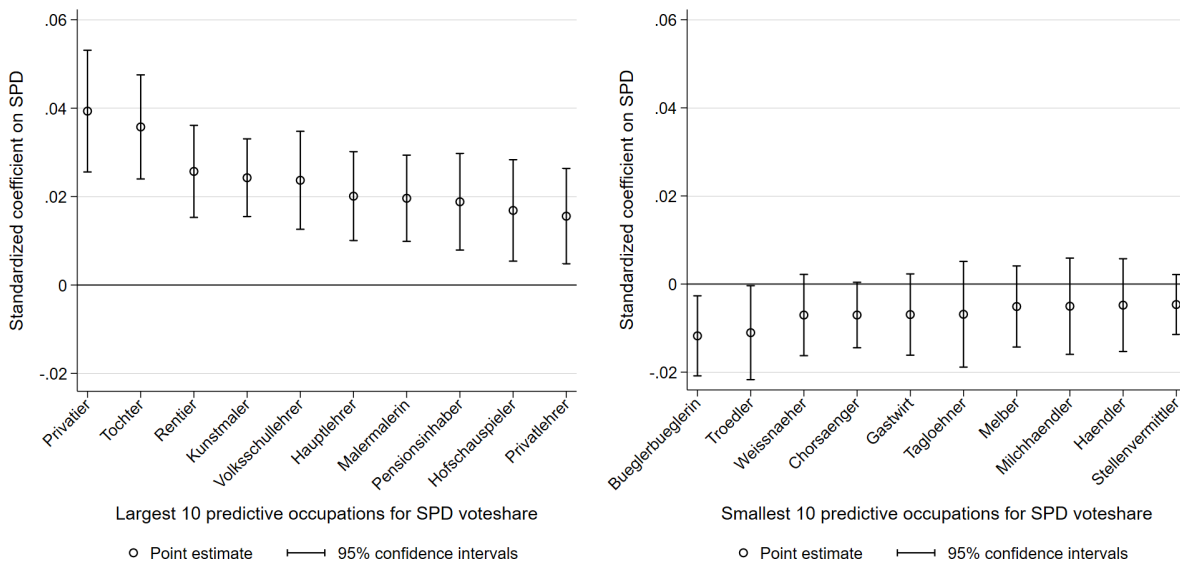
Comparing the occupations of the ten largest and smallest standardized effects of the non-widowed group.

Figure D.4: Largest and smallest coefficients for widowed women
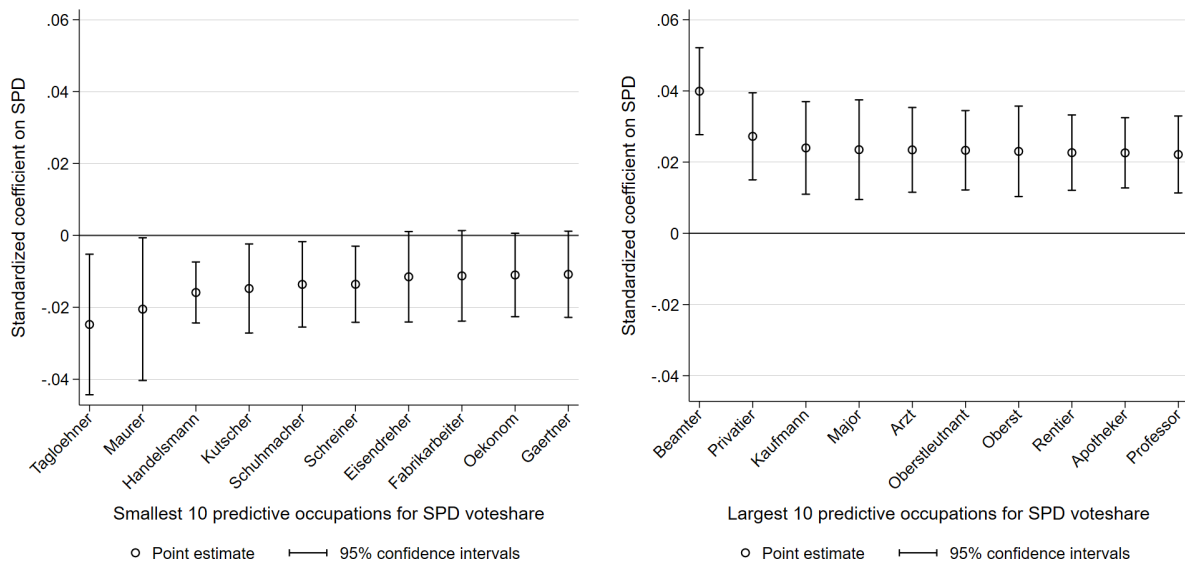
Comparing the occupations of the ten largest and smallest standardized effects of the widowed group.

D.1 By occupational score

Another way to show that non-widowed women are drawn from the upper tail of the distribution is to use the predicted occupational scores in Bühler et al. (2024). Higher scores correlate with higher wages. These scores are informative, as in higher values imply a higher occupational standing, yet lack the clarity of occupational titles and contain measurement error due to the prediction.

Nevertheless, Table D.1 shows that non-widowed women have higher occupational scores than widowed women. Even comparing women registered to the same address, and thus holding surrounding confounders constant, non-widowed women earn more than widows. We repeat the same exercise, but count the number of widows and non-widowes per occupational score (rounded to the first decimal) in Figure D.5. Again, higher occupational groups show higher representation of working, non-widowed, women.

Table D.1: Occupational score and Independent, non-widowed, women

	(1)	(2)	(3)	(4)	(5)	(6)
Elite Woman	0.188***	0.132***	0.125***	0.111***	0.132***	0.119***
	(0.021)	(0.021)	(0.030)	(0.030)	(0.026)	(0.026)
Street fixed effects		Yes	Yes	Yes		
Street-number fixed effects			Yes	Yes		
Address fixed effects					Yes	Yes
Building-type fixed effects				Yes		Yes
Floor fixed effects				Yes		Yes
Mean occupation score widows	4.563	4.564	4.571	4.570	4.569	4.568
Observations	29,504	29,446	26,463	26,271	26,281	26,091
# fixed effects		732	6,871	6,852	7,038	7,020
R^2	0.003	0.034	0.277	0.278	0.284	0.286

The unit of observation is a women in the 1910 directory. The outcome variable is the occupational score as derived in Bühler et al. (2024). Higher scores correlate with higher wages. Column (1) is a bivariate regression without fixed effects. Column (2) adds street fixed effects, Column (3) street-by-house number fixed effects to compare women within the same street and number. Column (4) adds fixed effects for the floor (0-6) as well as the building type (front- or rear-building). Columns (5) and (6) repeat this exercise but with address fixed effects, also accounting for subdivisions of the same street number (e.g. 46, 46a, 46b). *Mean occupation score widows* denote the mean occupational score in that sample for widows. Thus, non-widows earning 0.119 more, implies a relative effect of 2.6%. *#fixed effects* denote the number of fixed effects in this specification. Standard errors clustered by address shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure D.5: Binscatter plot: Share of non-widowed women per occupational score
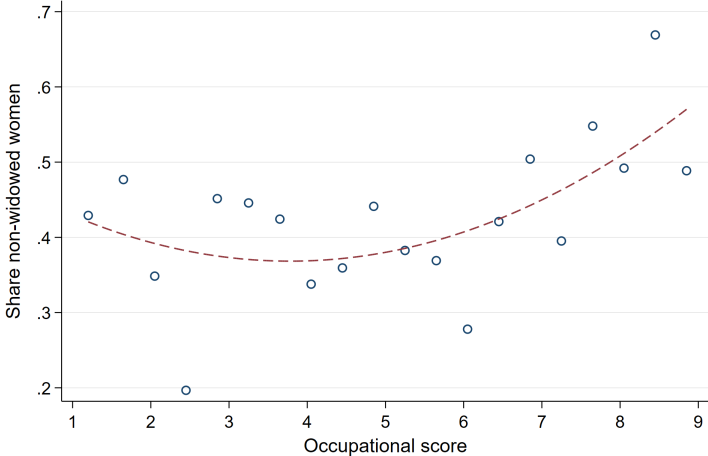
Comparing the share of non-widowed women per occupational score. Higher scores correlate with higher wages. Occupational scores are rounded to the first decimal to ensure enough coverage within each score.

E   Isolating landlord from tenant's preferences

In this appendix we attempt to disentangle the preferences of house owners, i.e. landlords, from the preferences of house occupants, i.e. tenants. Our directory data is rich enough to identify the gender of an owner, and if female, whether she is listed as the spouse of the owner. Out of the 16,692 addresses in 1910, we identify 2,442 that are owned by a women and 3,442 owned by an institution (of which 279 belong to an association). Of the remaining 10,830 houses, 5,005 individuals own one house and 2,281 individuals own two houses. Of the remaining houses, 877 are owned by an individual with between 5 and 9 houses, and 312 by an individual with more than 10 houses. Ownership is thus widely distributed, especially considering that some owners maybe misrecorded as owning multiple houses if they share names with another owner.

We define a house do be owned by a women if she is listed as the owner and not a spouse of the owner. We calculate the inhabitants of each house net of the owner, thus omitting all single-family units. The following Figure E.1 and Table E.1 reveal the strong positive relationship between women owning a house and women living in a house. Yet, this strong correlation neither affects our main estimate on non-widowed household heads (Table 6) nor predicts changes in voting patterns across the franchise threshold.

Figure E.1: Landlord's influence over tenant structure

(a) Non-Widowed Women   **(b)** Widowed Women
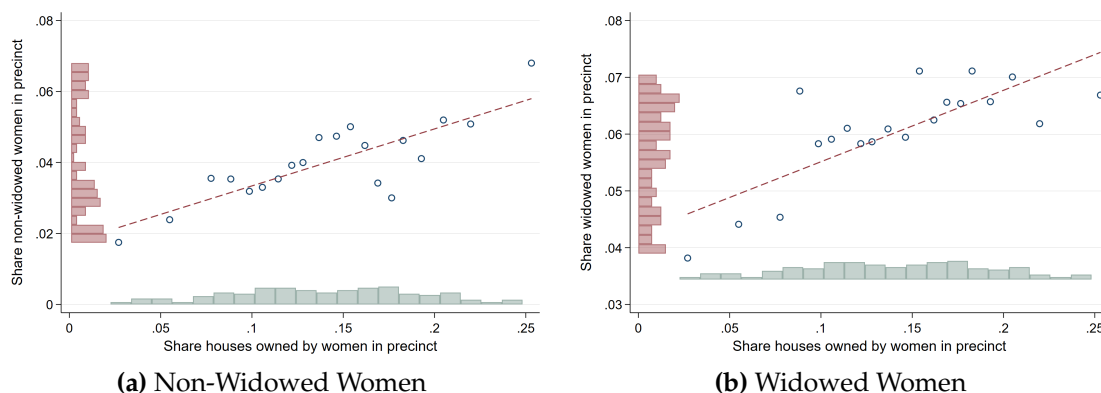
Comparing the share of non-widowed and widowed female household heads against the share of women owning a house.

Table E.1: Landlord's influence over tenant structure

	# Households		Share Non-Widowed Women		Share Widowed Women	
	(1)	(2)	(3)	(4)	(5)	(6)
Share Female Owner	-2.291		0.161***		0.126***	
	(5.875)		(0.031)		(0.025)	
Share Owned by Social Association		-8.557***		-0.067***		-0.034
		(3.222)		(0.016)		(0.023)
Observations	175	175	175	175	175	175
Mean Dependent Variable	11.981	11.981	0.040	0.040	0.060	0.060
Mean Owner variable	0.140	0.018	0.140	0.018	0.140	0.018

A cross-sectional regression at the precinct level showing that female-owned houses attract more women as tenants. The unit of observation is a 1912 precinct. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

F Additional Evidence, Figures, and Maps

In this appendix we provide additional evidence, figures, and maps. We begin with doing inference based on ecological inference, showing alternative ways to measure economic change, and show maps on how voting is distributed within Munich.

F.1 Ecological Inference

We begin by employing the method by King (2013) which is based on the identity that aggregated vote shares are a convex combination of groups' voting preferences:

$$SPD\ Share_p = share(men_p) * \beta^{Men} + (1 - share(women_p)) * \beta^{Women}$$

Using this identity, we can bound the fractions $\{\beta^{Men}, \beta^{Women}\}$ by assuming values for $\beta^{Women} = \{0, 1\}$ and solving for β^{Men}. As all other quantities are known values, we can then generate aggregate bounds, weighted by electorate's sizes in precinct p. Figure F.1 provides these bounds, together with the average voteshare of SPD in each precinct (dotted line).

Figure F.1: Ecological Inference
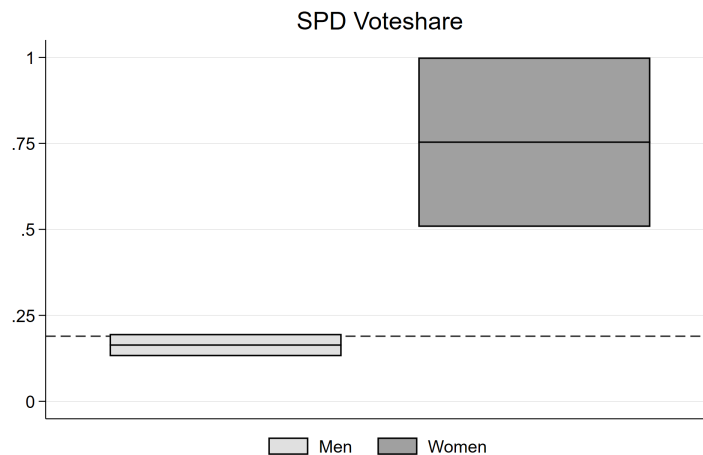
F.2 Measuring Economic Change

Finally, we substantiate evidence in Table 5 on economic impacts of World War I. We utilize the munich directories to identify the number of stores in each precinct, and compute the change between 1914 and 1919. We did not find a significant impact of economic conditions, maybe because the conditions, in general, improved.

Below, we replicate this analysis for each voting outcome, but replace the general "store" measure with measures showing the number of Bakeries (125 in 1914), Butchers (139 in 1914), Barbers (129 in 1914), and tobacco stores (129 in 1914). None of these more detailed measures show any

impact on voting outcomes, nor do they affect the point estimates of interest. Only when studying the number of actual stores lost (columns 9 and 10), calculated as the number of stores in address *a* that do close between 1914 and 1919, we do find small impacts on SPD and Nationalist vote shares.

Table F.1: The impact of World War I: Economics
SPD vote shares

	Bakery		Butcher		Barber		Tobacco		Stores lost	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Majority of Women:										
Change in Widows × Franchise	-0.941***		-0.949***		-0.953***		-0.960***		-1.013***	
	(0.353)		(0.357)		(0.357)		(0.366)		(0.364)	
Elite Women:										
Share Elite × Franchise		1.524***		1.552***		1.544***		1.551***		1.826***
		(0.265)		(0.262)		(0.263)		(0.264)		(0.275)
Economic losses:										
Economic Changes × Franchise	0.007	0.004	0.004	0.006	0.001	0.001	-0.001	0.004	-0.001	-0.005***
	(0.005)	(0.004)	(0.006)	(0.005)	(0.007)	(0.007)	(0.006)	(0.005)	(0.002)	(0.002)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vote share (German Empire)	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544
Vote share (Weimar Republic)	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
Mean change in widows	0.020		0.020		0.020		0.020		0.020	
Mean Share Elite women		0.045		0.045		0.045		0.045		0.045
Mean economic change	0.648	0.642	0.444	0.438	0.341	0.335	0.335	0.330	2.680	2.646
Observations	2,092	2,128	2,092	2,128	2,092	2,128	2,092	2,128	2,092	2,128

Results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three outcomes: The vote shares of the social democratic party, conservative center parties (Zentrum), and nationalist parties. Average vote shares during the German Empire and Weimar Republic are listed below. We consider three explanatory variables, all interacted with franchise to capture elite women's preferences, the preferences of the majority, as well as the effect of economic losses during the war. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between 1914 and 1919, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean change in widows*: 2%. *Share Elite* calculates the share of non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean share elite women*: 4.5%. *Economic Changes* calculates the relative change in the number of bakeries, butchers, barbers, tobacco stores or the number of stores lost. The mean change is given by *Mean economic change*. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. $* p < 0.10$, $** p < 0.05$, $*** p < 0.01$

Table F.2: The impact of World War I: Economics
Center vote shares

	Bakery		Butcher		Barber		Tobacco		Stores lost	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Majority of Women:										
Change in Widows × Franchise	-0.832***		-0.831***		-0.830***		-0.824***		-0.740***	
	(0.248)		(0.248)		(0.249)		(0.257)		(0.256)	
Elite Women:										
Share Elite × Franchise		0.808***		0.784***		0.788***		0.797***		0.759***
		(0.187)		(0.190)		(0.187)		(0.188)		(0.189)
Economic losses:										
Economic Changes × Franchise	-0.002	-0.004	-0.004	-0.003	0.002	0.002	0.001	0.004	0.002	0.001
	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vote share (German Empire)	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210
Vote share (Weimar Republic)	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248
Mean change in widows	0.020		0.020		0.020		0.020		0.020	
Mean Share Elite women		0.045		0.045		0.045		0.045		0.045
Mean economic change	0.648	0.642	0.444	0.438	0.341	0.335	0.335	0.330	2.680	2.646
Observations	2,092	2,128	2,092	2,128	2,092	2,128	2,092	2,128	2,092	2,128

Results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three outcomes: The vote shares of the social democratic party, conservative center parties (Zentrum), and nationalist parties. Average vote shares during the German Empire and Weimar Republic are listed below. We consider three explanatory variables, all interacted with franchise to capture elite women's preferences, the preferences of the majority, as well as the effect of economic losses during the war. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between 1914 and 1919, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean change in widows*: 2%. *Share Elite* calculates the share of non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean share elite women*: 4.5%. *Economic Changes* calculates the relative change in the number of bakeries, butchers, barbers or tobacco stores. The mean change is given by *Mean economic change*. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. $* \ p < 0.10$, $** \ p < 0.05$, $*** \ p < 0.01$

Table F.3: The impact of World War I: Economics
Nationalist vote shares

	Bakery		Butcher		Barber		Tobacco		Stores lost	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Majority of Women:										
Change in Widows × Franchise	1.016***		1.023***		1.028***		1.033***		1.116***	
	(0.271)		(0.271)		(0.271)		(0.274)		(0.279)	
Elite Women:										
Share Elite × Franchise		-1.176***		-1.193***		-1.189***		-1.196***		-1.430***
		(0.228)		(0.229)		(0.225)		(0.228)		(0.225)
Economic losses:										
Economic Changes × Franchise	-0.005	-0.003	-0.002	-0.002	-0.007	-0.006	0.001	-0.003	0.002	0.004***
	(0.004)	(0.003)	(0.005)	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)	(0.002)	(0.002)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vote share (German Empire)	0.239	0.239	0.239	0.239	0.239	0.239	0.239	0.239	0.239	0.239
Vote share (Weimar Republic)	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
Mean change in widows	0.020		0.020		0.020		0.020		0.020	
Mean Share Elite women		0.045		0.045		0.045		0.045		0.045
Mean economic change	0.648	0.642	0.444	0.438	0.341	0.335	0.335	0.330	2.680	2.646
Observations	2,092	2,128	2,092	2,128	2,092	2,128	2,092	2,128	2,092	2,128

Results using a difference-in-differences setup. Each column represents a separate regression. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. We consider three outcomes: The vote shares of the social democratic party, conservative center parties (Zentrum), and nationalist parties. Average vote shares during the German Empire and Weimar Republic are listed below. We consider three explanatory variables, all interacted with franchise to capture elite women's preferences, the preferences of the majority, as well as the effect of economic losses during the war. *Change in Widows* calculates the increase in the share of widowed women listed as household heads between 1914 and 1919, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean change in widows*: 2%. *Share Elite* calculates the share of non-widowed women listed as household heads, relative to the number of women listed as living in this precinct 1910. The mean is given by *Mean share elite women*: 4.5%. *Economic Changes* calculates the relative change in the number of bakeries, butchers, barbers or tobacco stores. The mean change is given by *Mean economic change*. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

F.3 Measuring Social Capital

The following set of tables highlight that no other measure of social capital predicts the patterns of Table 7.

Table F.4: The impact of social capital
SPD Voteshares

	# Churches		# Associations		# Female associations		# Schools	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Majority of Women:								
Change in Widows $\times$ Franchise		-0.975**		-0.901**		-0.906**		-0.881**
		(0.485)		(0.379)		(0.362)		(0.397)
Elite Women:								
Share Elite $\times$ Franchise	1.515***		1.480***		1.534***		1.491***	
	(0.321)		(0.282)		(0.264)		(0.285)	
Interaction with social Capital:								
$\times$ Social Capital $\times$ Franchise	0.075	0.029	0.217	-0.059	-0.131	-0.057	0.067	-0.292
	(0.235)	(0.345)	(0.256)	(0.388)	(0.534)	(0.884)	(0.195)	(0.573)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election District $\times$ Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,128	2,092	2,128	2,092	2,128	2,092	2,128	2,092
Linear combination of estimates $\hat{\delta}$	1.549	-0.957	1.538	-0.915	1.517	-0.913	1.532	-1.044
p-value of $\hat{\delta}$	0.000	0.028	0.000	0.027	0.000	0.002	0.000	0.028
Mean # of social capital	0.503	0.503	0.280	0.280	0.143	0.143	0.589	0.589

Results using a triple-difference-in-differences setup analysing social capital as a mediating channel. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. Social capital is measured by either the number of churches (col 1-2), the number of associations (col 3-4), the number of female associations (col 5-6), or the number of schools (col 7-8). 'Change in Widows $\times$ Franchise' + 'Change in Widows $\times \mu \times$ Social Capital $\times$ Franchise' + '$\mu \times$ Social Capital $\times$ Franchise', where μ denotes the mean number of 'social capital' per precinct as defined in the last row. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table F.5: The impact of social capital
Center Voteshares

	# Churches		# Associations		# Female associations		# Schools	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Majority of Women:								
Change in Widows × Franchise		-0.980***		-0.858***		-0.851***		-0.901***
		(0.295)		(0.267)		(0.257)		(0.291)
Elite Women:								
Share Elite × Franchise	0.740***		0.849***		0.820***		0.713***	
	(0.221)		(0.204)		(0.193)		(0.200)	
Interaction with social Capital:								
× Social Capital × Franchise	0.044	0.191	-0.251	0.175	-0.493	0.536	0.125	0.169
	(0.141)	(0.278)	(0.169)	(0.346)	(0.357)	(0.718)	(0.087)	(0.323)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,128	2,092	2,128	2,092	2,128	2,092	2,128	2,092
Linear combination of estimates $\hat{\delta}$	0.761	-0.882	0.784	-0.809	0.756	-0.775	0.779	-0.805
p-value of $\hat{\delta}$	0.001	0.004	0.001	0.008	0.001	0.008	0.000	0.006
Mean # of social capital	0.503	0.503	0.280	0.280	0.143	0.143	0.589	0.589

Results using a triple-difference-in-differences setup analysing social capital as a mediating channel. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. Social capital is measured by either the number of churches (col 1-2), the number of associations (col 3-4), the number of female associations (col 5-6), or the number of schools (col 7-8). 'Change in Widows × Franchise' + 'Change in Widows $\times \mu \times$ Social Capital × Franchise' + '$\mu \times$ Social Capital × Franchise', where μ denotes the mean number of 'social capital' per precinct as defined in the last row. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table F.6: The impact of social capital
Nationalist Voteshares

	# Churches		# Associations		# Female associations		# Schools	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Majority of Women:								
Change in Widows × Franchise		1.377***		1.021***		1.041***		0.948***
		(0.354)		(0.288)		(0.278)		(0.306)
Elite Women:								
Share Elite × Franchise	-1.306***		-1.188***		-1.215***		-1.124***	
	(0.278)		(0.232)		(0.222)		(0.235)	
Interaction with social Capital:								
× Social Capital × Franchise	0.144	-0.446*	0.053	-0.131	0.447	-0.636	-0.099	0.206
	(0.177)	(0.238)	(0.231)	(0.344)	(0.517)	(0.795)	(0.153)	(0.530)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Election District × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,128	2,092	2,128	2,092	2,128	2,092	2,128	2,092
Linear combination of estimates $\hat{\delta}$	-1.238	1.152	-1.175	0.983	-1.156	0.950	-1.179	1.064
p-value of $\hat{\delta}$	0.000	0.001	0.000	0.002	0.000	0.002	0.000	0.001
Mean # of social capital	0.503	0.503	0.280	0.280	0.143	0.143	0.589	0.589

Results using a triple-difference-in-differences setup analysing social capital as a mediating channel. All regressions include a full set of precinct and election-year fixed effects, election district, mean density, and occupational status interacted with election-year fixed effects and a linear, precinct-specific, trend to the main equation. Social capital is measured by either the number of churches (col 1-2), the number of associations (col 3-4), the number of female associations (col 5-6), or the number of schools (col 7-8). 'Change in Widows × Franchise' + 'Change in Widows $\times \mu \times$ Social Capital × Franchise' + '$\mu \times$ Social Capital × Franchise', where μ denotes the mean number of 'social capital' per precinct as defined in the last row. The unit of observation is a precinct-election year. Precincts are normalized to the 175 precincts of 1912. Standard errors clustered by precinct shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

F.4 Spatial patterns in Munich

The following set of maps shows the distribution of women and votes prior to franchise. To construct these maps we use modern day buildings as original maps have not been located and georeferenced.

Figure F.2: 1910 Census share of women per address.

Legend:
- 0.00 - 0.14
- 0.14 - 0.35
- 0.35 - 0.46
- 0.46 - 0.53
- 0.53 - 0.61
- 0.61 - 0.70
- 0.70 - 0.85
- 0.85 - 1.00

0   0.25   0.5   1 Kilometers

N

Figure F.3: Distribution of non-widowed women in the 1910 directory

0.00 - 0.02   0.06 - 0.11   0.18 - 0.27   0.41 - 0.67
0.02 - 0.06   0.12 - 0.17   0.28 - 0.40   0.68 - 1.00

0   0.25   0.5   1 Kilometers

N

Figure F.4: SPD vote shares 1912

0.13 - 0.21 0.30 - 0.38 0.45 - 0.51 0.56 - 0.63
0.21 - 0.30 0.38 - 0.45 0.51 - 0.56 0.64 - 0.75

0   0.25   0.5   1 Kilometers

N

Figure F.5: Zentrum vote shares 1912

☐ 0.04 - 0.07	☐ 0.09 - 0.10	■ 0.11 - 0.12	■ 0.14 - 0.15
☐ 0.07 - 0.09	■ 0.10 - 0.11	■ 0.12 - 0.14	■ 0.15 - 0.21

0   0.25   0.5   1 Kilometers

N