When Do Family Ties Matter? The Duration of Female Suffrage and Women's Path to High Political Office

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Abstract

While the percentage of female heads of state in the world has increased to around ten percent in the 2010s, a female president or prime minister still remains an exception. Recent scholarship has proposed a number of explanations behind this phenomenon, but there exist important gaps. The contribution of this paper is threefold. First, we use new and comprehensive data to undertake a systematic examination of the differences in the personal, education, and career backgrounds between female and male effective political leaders from 1960 to 2010. We find that women are as experienced as men. Second, because the phenomenon of female leadership is still a rare occurrence, we argue that this fact must be accounted for in empirical modeling. Third, we develop the widow's mandate argument further: lacking personal networks, many female leaders tend to acquire the necessary resources, support, and name recognition for their efforts through political dynasties. To that end, women leaders need to rely on family ties more than men do. However, the importance of such connections attenuates when female suffrage has been in place for longer and citizens are more open to women in politics.

Key Words: gender and politics, political leaders, selection into office, representation

What factors determine whether women are ultimately successful in holding the highest office in their country? Given that the incidence of female heads of state is such a rare event, one might assume that women tend to have fundamentally different levels of political experience or background traits than men do. However, because of the scarcity of female leaders in politics, it is difficult to make inferences about the background characteristics that distinguish female leaders from males in terms of their qualifications for their country's highest office.

We argue that two different but related factors come into play when considering women's advancement to their country's highest office. First, although women and men have similar paths to leadership in terms of their levels of education and career trajectories, female leaders require significant resources, connections and networks to achieve political leadership — more so than their male counterparts (Jalalzai, 2013; Folke, Rickne and Smith, 2017). Those resources most frequently take the form of being part of political dynasties, particularly when women are not present in politics more broadly. However, family dynasties are less important the longer that women have been active in political life more generally. We argue that once female suffrage has been institutionalized — that is, if voting rights have been in place to an extent that female participation in politics is regarded by citizens as commonplace — the importance of family ties will decrease. That is, women leaders benefit from family ties when women are scarce in political life generally, but as their participation becomes normalized, family ties become less important.

We test our argument using a novel dataset that allows us to compare the individual backgrounds of all male and female leaders in the world from 1960 to 2010. Previous studies, due to data limitations, have only been able to compare female leaders with a limited selection of male leaders. Drawn from extensive firsthand research on the biographies of leaders around the globe, these original data allow us to broaden the scope of previous studies, by comparing the

accomplishments and background of female leaders with their male counterparts around the globe over five decades.

This paper makes a number of contributions. First, in contrast to studies that compare female and male leaders on a limited basis (such as comparing all female leaders with their immediate male predecessors in the same office), or in small-sized or contemporaneous samples, we study all female and male leaders, drawing from an original dataset of the background characteristics of leaders. These data allow us to gain unprecedented leverage on the personal attributes of male and female leaders alike. Second, because female leadership is a rare event over time and across space, we account for possible bias in the estimates due to this scarcity, using techniques that are not common in the literature on women in executive posts. Third, we build upon, and extend, the "widow's effect" argument (e.g., Folke, Rickne and Smith, 2017; Jalalzai, 2013; Opfell, 1993; Solowiej and Brunell, 2003) by emphasizing the interactive aspect of the political climate and family connections, specifically the ways in which the effect of dynasties changes once countries have established a tradition of women in politics.

These are important findings for the literature on representation in politics. Recent scholarship has examined the determinants of female leadership on a smaller scale — in a given country or region, for example; or even in a given institution such as the legislature; or through analyzing a few high-profile female leaders. But such studies may lead to incomplete or biased conclusions regarding the differences in political experience and traits between *all* male and female leaders. Our arguments build on a wealth of existing studies of female leadership in executive office (e.g., Bauer, 2011; Jalalzai, 2016; Genovese and Steckenrider, 2013; Murray, 2010*a*; O'Brien, 2015; Opfell, 1993; Thames and Williams, 2016), but broaden them to consider the factors that, across history and for all parts of the world, might distinguish women from men with respect to their ability to reach top political leadership.

How Different Are Female Leaders?

Women remain underrepresented in nearly all aspects of professional and political life, particularly at the upper echelons. In 2016, less than 7 percent of all political leaders in the world were female (22 out of 315 heads of state and heads of government). If we count *effective* leaders — excluding prime ministers in presidential systems or ceremonial presidents in parliamentary systems — the number is still 7 percent, or 15 out 193 effective leaders. This lack of representation mirrors similar statistics in other professions. Women are more likely to be found in the lower tiers of business, academia, and public service, where representation tends to be on par with demographics. But their numbers thin dramatically as the ranks get higher.

Across disciplines, scholars acknowledge that the lack of women's participation in public life cannot be attributed to their backgrounds. Experience and qualifications cannot explain the relative lack of female CEOs in publicly traded firms worldwide (Fawcett and Pringle, 2000), and female cabinet ministers are generally as experienced as men (Escobar-Lemmon and Taylor-Robinson, 2016). As Thames and Williams (2016, 39) underline, public perceptions regarding participation of female politicians in executive office are often clouded by the visibility of a limited number of influential leaders, such as Indira Gandhi or Golda Meir, for example. Still, many scholars have offered significant insight into the attributes of female leaders more broadly. For example, Jalalzai (2013) compares the individual background of female politicians with preceding male leaders in the same office, finding that overall women have similar educational qualifications and experience as men (although female leaders are more likely to have a background in human or social service ministries). Other studies focus on female executives in democratic regimes only (Thames and Williams, 2016), or on later periods from 2000 (Jalalzai, 2016). However, as of yet we do not know whether the backgrounds of women leaders systematically differ from those of *all* male leaders, due to a lack of comprehensive

data on the backgrounds of leaders in all political regimes over time.

By looking at the full spectrum of women in effective political leadership, across a broad swath of countries and years, we can be better positioned to investigate differences between men and women leaders in different contexts around the globe. Before attempting to explain the phenomenon of female leadership on a global scale, first we validate the above-mentioned accounts of the lack of differences between male and female leaders. To do so, we rely on a comprehensive original dataset from 1960–2010 that covers 1,501 effective political leaders in all political regimes, the first of its kind addressing the question of female leadership. To avoid inflating the number of female executives, we focus on *effective* political leaders and exclude other leaders in dual arrangements, such as ceremonial presidents or monarchs in parliamentary systems where female politicians may appear. The data include background information, acquired from firsthand archival research, on leaders in all countries in the world, including parliamentary and presidential democracies as well as non-democratic countries. To our knowledge, this is the most comprehensive data available on the background of the heads of state, which makes it ideal for differentiating the attributes of male and female leaders.[1]

Generally speaking, individuals with traits conforming to the norms of existing regimes are typically selected for leadership (e.g., Sullivan et al., 1993). It is possible, therefore, that women leaders are more likely to emerge in political environments that favor politicians with typical traits and career paths, in contrast to political regimes that never experienced female leadership. As a result, if we restrict the sample to settings where female politicians are more likely to be encountered, such as democratic regimes, there may be no difference between genders. In contrast, we run the risk of inflating differences if we include settings where women leaders never appear, such as in military regimes. With the goal of conducting the most conservative

[1]More information on these data can be found in the appendix.

comparison, here we compare male and female leaders in *all* political regimes. This comparison substantiates previous findings reported on the basis of smaller samples (Escobar-Lemmon and Taylor-Robinson, 2016; Jalalzai, 2013). For robustness, in the appendix we compare leaders restricting to more democratic settings.

Figure 1 compares male and female political leaders in terms of their personal, educational and professional background, as well as their political experience. Age is not a separating factor. On average, men and women alike enter office when they are 53 years old. There are also no significant differences in terms of whether they have civil service, business, or academic careers prior to the highest office.

Men and women leaders have similar educational backgrounds. They are equally likely to study abroad and in the West (among leaders of non-Western nations), or to have received an education in law, economics, the humanities, engineering and science, or in medicine. However, women are more likely to have a political science degree or the equivalent. Also, no female leader has ever received a military education.

There is no evidence that women lack in political experience compared with men. On average, prior to the highest office, women and men spend 13 years in formal politics, often as members of parliament, governors, or cabinet ministers. There are no notable differences in terms of the type of experience, such as whether female leaders occupied the post of foreign or defense minister. Even though 21 percent of female leaders, as opposed to 9 percent of male leaders (excluding non-presidential regimes), are former vice-presidents, these differences are not statistically significant. What is different, however, is that male leaders are much more likely to have held a cabinet finance portfolio in the past. Women also tend to take on more of the so-called "female"-oriented ministerial portfolios, related to health, education, employment, labor, environment, integration, or social affairs. This comports with findings by

Escobar-Lemmon and Taylor-Robinson (2016), although they find that women in what they call "feminine policy domains" tend not to advance further in their careers.

However, female leaders tend to have a very different family background than do their male counterparts. This is initially apparent in terms of class: 35 percent of women come from upper– and upper-middle class families (based on their parents' socioeconomic status and profession as described in biographical entries), as opposed to 21 percent of men. More importantly, as opposed to only 14 percent of men, 35 percent of women belong to prominent political families where their fathers, husbands, or brothers occupied the highest political post in the past (e.g., Indira Gandhi of India) or alternatively were leaders of pro-independence or pro-democracy movements (e.g., Corazon Aquino of the Philippines). These two differences are statistically significant (see the supplementary materials for further details).

[Figure 1 ABOUT HERE]

In summary, while two differences do exist in terms of the type of ministerial portfolios, overall, women appear to be equally educated and experienced as men. The most notable trait that makes women leaders different from men, according to these data, is a much higher likelihood that they come from a prominent political family name. The following section reviews the literature and outlines our theory for when and why such family ties might matter for women.

When Do Family Ties Matter?

In comparative perspective, what distinguishes male and female leaders is not their education or experience, but whether they are likely to have family ties. If women leaders generally have similar backgrounds to men, why is it that so many female executives — but not all — hail from political dynasties?

Scholars have presented no shortage of factors that come into play for the lack of female leadership more generally. Studies of political representation have long noted that participation

at all levels tends not to favor women and minorities (Thomas and Wilcox, 1998). The factors that account for these patterns are manifold, and social scientists have attempted to disentangle this phenomenon through various methods (For an overview, see Folke and Rickne, 2016; Córdova and Rangel, 2017). Leadership aspirations among girls in the population at large are affected by overall female participation (Beaman et al., 2012). Women are less likely to put themselves forward as candidates for office (Bledsoe and Herring, 1990; Kanthak and Woon, 2015), partially because they are more averse to competitive environments (Preece and Stoddard, 2015). Even if they do so, they are more vulnerable to campaign negativity (Krupnikov and Bauer, 2014) and perceptions of corruption (Barnes and Beaulieu, 2014).

We focus particularly on two sets of arguments in this literature. The first concerns the informational and visibility disadvantages that women face when seeking high office, and the way that family ties can help them overcome those barriers. The second centers on the environments that enable women to make greater headway in the absence of family ties.

Family Ties and Female Political Advancement

The first set of arguments from which we draw centers on the informational disadvantages that both female candidates as well as voters face when encountering the prospect of running for high office (Werner and Mayer, 2007). Women face financing disadvantages, as they have tended to be on a less sure footing economically than men and are less likely to have personal funds to finance their campaigns (Phelps, 2004). They also tend to have fundraising difficulties, as funders do not view them as credible candidates (Conway, 2001). Social networks play a vital role in political advancement (McClurg, 2003), and many studies have looked at how women might be disadvantaged in their efforts to become part of such a network. Furthermore, they experience biases and encounter informational disadvantage with voters who are not ac-

customed to elect female candidates and who may be unfamiliar with their quality (Folke and Rickne, 2016).

Because of the barriers women face, the required resources in terms of networks, financing, and brand recognition have traditionally come about through one key avenue: being part of a family dynasty of politicians, particularly in countries that do not have a precedent of women in politics. Because party leadership and male networks tend not to be open to females (O'Brien, 2015), often women's only option is to be born or married into them. Scholars have shown that well-connected social backgrounds are crucial for female participation in politics in non-Western politics (Franceschet and Piscopo, 2013; Schwindt-Bayer, 2011). Similarly, Gertzog (2002, 96) shows that in the United States up until 1942, particularly in the South, "most Congressional widows ... were born into families whose men were part of their state's socioeconomic and political elites." Of women who were not widows, the largest group had significant family political connections, which were crucial in providing resources, reputation, and financing Gertzog (2002, 100).

Around the world, women have traditionally entered first into politics as the wives of politicians. Indeed, some of the early women in politics replaced husbands who had died unexpectedly while in office. In the United States, the so-called "widow's mandate" has been a pattern in political life since 1923. Jeanette Rankin was the first woman elected to Congress (specifically, the House of Representatives) in 1916, even though women in the US were barred from the national vote until 1920. Up until 1942, nearly half of the female representatives to Congress were widows of former Congressmen (Gertzog, 2002). The first time a female achieved executive office in the modern times was in 1960, when Sirimavo R.D. Bandaranaike, herself the wife of the assassinated prime minister, became the head of state of then-Ceylon. More generally, Collins and Teele (2016) show that many initial instances of female suffrage were

extended first to widows. The argument for the widow's effect in politics is therefore not new (Solowiej and Brunell, 2003).[2]

The "widow's mandate," however, came with delineated expectations about the degree of autonomy and authority that women were meant to command. Their roles were limited, and the expectation was that they would simply serve as placeholders until a male successor came in. As expressed in Fitzpatrick (2016), women were expected to remain largely passive and to bow out gracefully when the time came:

> "A widow's closeness to her late husband, and her familiarity with his political beliefs, offered at least the veneer of continuity as well as a tasteful, if temporary, memorial to the deceased office holder. As Mae Ella Nolan, the first widow elected to fill out her husband's term, in 1923, put it, 'I owe it to my husband to carry on his work. ... No one better knows than I do his legislative agenda.'" (Cited in Fitzpatrick (2016).

As time progressed, these political connections took on a different form, and attendantly the women who achieved office played a more active role. The women who succeeded in entering office in the US tended to be either from family political dynasties or to have still-living political husbands. Even if women establish their political career alongside a spouse with similar ambitions, "the gendered rules of the game have meant that the male spouse has often been the first to succeed at high office, even within a marriage of equals" (Murray, 2010*b*, 15).

[2]Jalalzai (2013, 113) and Opfell (1993) point out that kinship ties often help female leaders to succeed into the highest political office. More recently, Jalalzai (2016) acknowledges that women presidents in Latin America almost always were daughters and wives of former presidents or opposition leaders, and examines four female leaders in detail, particularly analyzing the case of Michelle Bachelet of Chile who was elevated without the assistance of family ties.

The value of family ties goes beyond resources and political networks. Folke, Rickne and Smith (2017) find that dynastic ties help women candidates to overcome a vote disadvantage in elections, where voters rely on familial relationships of female politicians as informational cues about their quality. We would, however, expect an amplified effect for heads of state. For women leaders whose elevation is subjected to the choice of the electorate, such as in direct presidential elections or when such women run in parliamentary elections as party leaders and therefore, as potential prime ministers, the connections to "brand names" will be particularly important. This is because family ties may assist women in winning the popular vote and in overcoming voter biases against such "unusual" candidates as female national politicians. In contrast, for women who can be elected as prime ministers by their own parties mid-term or who assume presidential office in the process of succession from their vice-presidential office, family "brand names" will be less crucial to counter possible voter biases. This is also consistent with Smith and Martin (2017), who argue that for cabinet ministers, dynasties could either provide electoral boosts indirectly, through informational advantages, or directly, through electoral popularity.

The social, reputational, and financial benefits of networks are helpful for office generally but pivotal in running for executive office. Of all public offices (with the possible exceptions of defense ministers (Barnes and O'Brien, 2016) and party offices (Verge and Claveria, 2016), the presidency and prime ministership are the most gendered in politics, which makes them even more challenging for women to achieve (Clift and Brazaitis, 2000). For instance, even though Cristina Fernandez of Argentina (2007–15), the wife of former president Néstor Kirchner (2003–7), as "an outspoken member of the upper house ... was far better known than her husband when he was elected as president in 2003" (Popper and Grazina, 2011), her election in 2007 was only made possible because she could rely on her husband's resources and who,

after departure from office, headed the ruling party and "battled behind the scenes to shore up support for his wife from the kingpins of the fractious Peronist party" (Popper and Grazina, 2011). Thus, at the executive level, family dynasties would be even more important in order for a woman to achieve success. Even if females are equally or even more qualified than men, a political family background can provide them access that would be difficult for them to achieve otherwise.

The Interactive Effect of Family Ties and Female Political Participation

While many women leaders rely on family connections, even more of them — specifically, as Figure 1 indicates, two-thirds of female leaders — are elevated to high office without family ties. When do such ties matter? We argue that the importance of family ties is contingent on prevailing norms of female participation in politics so that such ties are especially important in settings with weak norms of female participation. In many countries, especially those with traditional values — such as the settings that elevated Indira Gandhi of India or Khaleda Zia of Bangladesh — the norm is not to have a female politician, especially a female political leader. The only possibility to have female leaders elected in such countries, particularly when women leaders need to be elected directly, is through the widow's effect. In contrast, family connections should not be as crucial for selection of women in settings where female participation in politics has long been established.

The adoption of female suffrage marks the onset of women's formal participation in political life. The longer that suffrage has been in place, the less important a family dynasty will be in facilitating the rise of a female leader. The introduction of female suffrage requires a substantial amount of mobilization and lobbying, both at the political level and at the public level. As Teele (2014) describes, women's suffrage movements were characterized by informa-

tion dissemination to raise awareness of the issue, including editorials, rallies, campaigns, and fundraising efforts. Women at the head of these movements also had to familiarize themselves with the existing political leaders and the legislative process necessary to change voting laws. Such organizational movements initiated the process of forging the political networks that later became useful to females hoping to enter politics more generally (Teele, 2017).

Once a government institutes female suffrage, women can enter politics first at the ballot box and then in political life more broadly. When women have had the right to vote for longer, all things being equal, citizens will be more open to women in politics than they would be otherwise. This, of course, can be accompanied by the development of other, more formal institutions that can make a significant difference in female participation, such as quotas and changes in party rules for participation.[3] But all of those political changes are preceded by the movement to extend the franchise.[4]

Thus, we advance the widow's effect argument by arguing that for women leaders, the effects of political dynasties and a history of female suffrage is interactive. The effects of family ties are contingent on the institutionalization of female participation in politics. Family

[3]Generally, various types of institutions, group size, party- and district-level characteristics influence the success of women's campaigns for office (Kanthak and Krause, 2013; Fox and Lawless, 2010; Schwindt-Bayer, Malecki and Crisp, 2010). Also, proportional representation (PR) electoral systems tend to be favorable to female candidates (Caul, 1999) while gender quotas have also increased female participation in politics (Hughes, 2011; Krook, 2010; O'Brien and Rickne, 2016; Bush, 2011). Furthermore, female presidents improve women's representation by appointing more female ministers (Reyes-Housholder, 2016). All of these phenomena are closely linked to — and indeed, are outcomes of — the initial effort of instituting women's right to vote, as we will explore in the empirical analyses.

[4]Indeed, Teele (2017) operationalizes the strength of the women's movement as state membership in a large national suffrage organization.

connections play an important role in electing women in the early stages of a country's political development. However, we argue that in subsequent stages, those ties are much less important. Furthermore, the routinization of females in political life is distinct from the mere passage of time or years of uninterrupted democracy, as we discuss in the empirical section. Consider Roza Otunbayeva of Kyrgyzstan or Dalia Grybauskaité of Lithuania, neither of whom could claim family connections to politics. Their nations, however, had a long history of female suffrage since independence in the aftermath of World War I and as the constituent parts of the USSR. Arguably, it was not inconceivable or that unusual in these countries to have female leaders because of a long history of acceptance of women in politics.

Modeling Female Leadership

Earlier we introduced data on all political leaders to validate previous findings that female heads of state are equally, if not more, qualified, than their male counterparts. The key difference is family ties, which for women manifest as political dynasties that provide visibility, mentoring, and financing, but can later be supplanted by other institutions after suffrage is introduced. Here we test this argument and examine whether — and under what conditions — political ties make the selection of women leaders more likely, controlling for other factors.

Our research question centers on the selection of female politicians in office, not about their longevity in office. Therefore, we only include observations for the year of entry into office. Thus, the unit of analysis is the leader/country/year, but only for that initial year of service. The dependent variable is a binary indicator of whether the leader entering office is a female. The effects of cultural, socioeconomic or personal factors, by the logic of the argument, only influence whether female leaders are chosen. This makes our analyses consistent with the literature on the selection of leaders (e.g., Baturo, 2017; Besley and Reynal-Querol, 2011),

as opposed to that of the effects of leaders on various outcomes (Horowitz and Stam, 2014; Alexiadou, 2015).

These data cannot address the selection stage for female candidates. We only observe women who succeeded in their bids for high office, not candidates. While an examination of winning and losing candidates is feasible in single-country studies, or even in comparative studies of presidential elections across nations, it is more difficult in analyses that include all political regimes over time, as does the present study. Arguably, for parliamentary regimes, all members of parliament who belong to the majority party or coalition are potential political leaders. The identification of "losing" candidates in non-democratic regimes would be even more challenging. These data also cannot account for the processes that lead women to choose to run for office in the first place, as others have studied in laboratory settings (Kanthak and Woon, 2015). Indeed, such an omission even leaves out further examples of females who did not secure office even despite family connections. For example, Panama's Mireya Moscoso — the widow of Arnulfo Arias, who was the country's president on three separate occasions — had a failed run in 1994 before being elected to high office in 1999.[5] Thus, although a study of the selection process of female leaders would require much more extensive data, anecdotal evidence suggests that dynasties might have a foothold in these earlier stages as well.

In terms of sample selection, we want to ensure that we include only relevant observations. Even though female leaders may assume office in non-democratic settings, such as Lydia Gueiler (1979-80) of Bolivia or Rose Rogombé (2009) of Gabon, they are almost always interim leaders. Female leadership is, however, encountered in partly democratic or transitional settings. Therefore, we limit the estimation sample to more democratic settings where female

[5]In 1998 in Honduras, Alba Gunera de Melgar — the widow of former president Juan Alberto Melgar — had an unsuccessful bid for the presidency. Hilary Clinton also failed in her 2016 bid for US president.

leadership is likely be encountered, to political regimes where the *Polity2* score has positive values.[6] Altogether, there are 48 effective female political leaders from 1960–2010, or 5 percent in the estimation sample of 980 leaders. In supplementary materials, we also estimate on a full sample that includes non-democracies and on a smaller sample that includes fully democratic regimes, i.e., above *Polity2* $+6$ (Marshall and Jaggers, 2011).

The emergence of female heads of state is clearly a rare event. However, most existing studies of female political leaders do not account for this reality in their modeling decisions, which may lead to a possible bias. Because only 5 percent of leaders in the estimation sample of our data are female, maximum likelihood estimation (MLE) of a logistic model may suffer from a small-sample bias. Therefore, we turn to a so-called penalized MLE procedure, proposed by Firth (1993). The method overcorrects for possible bias and allows convergence of finite estimates with rare-events data. Specifically, we fit the Firth method to logistic regression. In the supplementary analyses, we also specify an alternative method, rare events logit.

Family Ties and the History of Female Suffrage

We posited that reliance on family connections is often paramount for success for female leaders. However, family ties should particularly matter in settings where women are an unfamiliar sight in political life. We therefore expect that *Political family* (a binary indicator for whether a woman has a relative in politics, either through birth or marriage) should particularly matter in new democracies or in countries with relatively short histories of female suffrage.

To study whether the effects of coming from a political dynasty depend on the extent of acceptance of female participation in politics, we specify an interactive model. In contrast

[6]Besley and Reynal-Querol (2011, 555), who also explained the selection of leaders, equally relied on the *Polity2*'s cut point of 0 for more democratic settings.

to Collins and Teele (2016), who directly examine the effects of female suffrage on electoral politics, we rely on the length of time suffrage is in place. We argue that the duration of female suffrage can be employed as a proxy for the normality of female participation in politics, frequently followed by the introduction of formal institutions that solidify this participation, as we will show in supplementary analyses. The existence of the norm of having women in politics as perceived by citizens is similar to the concept of institutional routinization (Linz and Stepan, 1996, 10).

We therefore include *Female suffrage, years*, the number of years from the first introduction of female suffrage, even if complete female suffrage was not introduced at the time.[7] For example, for Belgium, *Female suffrage, years* is counted from 1919 when a female's right to vote — subject to conditions — was first introduced, not from 1948 when all restrictions were lifted.

Instead of a logarithmic transformation, we normalize years of female suffrage using an inverse hyperbolic sine transformation (Burbidge, Magee and Robb, 1988). The transformation accounts for the fact that some observations have the value of zero for years of entry into office when female suffrage is not yet introduced. Furthermore, we want to ensure that the suffrage variable does not simply account for the passage of time. To that end, we additionally account for a possible time trend.[8] It may be difficult to distinguish whether political dynasties are more likely early on (coinciding with the introduction of female suffrage) or whether norms

[7]Female suffrage data are taken from the Inter-Parliamentary Union, `http://www.ipu.org/wmn-e/suffrage.htm`, accessed 15 June 2016.

[8]Because the unit of observation is the first year of entry into office for each leader, the data structure is a very unbalanced panel data. From 1960–2010 some countries may have only one leader (as in Brunei or Cuba), and therefore only one observation per country, while others have many more (26 in Japan, 27 in Bolivia, 31 in Italy) — leader-observations.

surrounding female participation in political life are weaker in the past. Therefore, we include time polynomials, that is, the count of count of years, as well as the squared and quadratic terms of the count of years. In the appendix, we also fit models with fixed year effects for robustness.

Competing and Complementary Explanations

While we are primarily interested in the interactive effect of dynasties and institutions, we also consider additional explanations. Previous research has demonstrated the importance of democracy, gender parity, politically unstable contexts, and the mere fact of having a previous female leader in the past (Jalalzai, 2013, 2008). Therefore, to account for the possibility that female leaders are more likely to emerge in more developed and democratic nations, we include *Income* per capita (logarithm of *rgdpl*) (Heston, Summers and Aten, 2012), and the *Polity 2* score (Marshall and Jaggers, 2011). Also, the so-called "glass cliff" phenomenon (Ryan and Haslam, 2005) may imply that during a crisis, female qualities for leadership, such as compromise and pragmatism, may be seen as more desirable than they would be otherwise. To test for the possibility that women are more likely to be selected for leadership in perilous economic or political circumstances, we include two variables: the economic growth rate in the year before assuming office, as well as whether the country experiences a military conflict, also in the previous year.[9] It is also possible that observing female heads of state and government in the same region may make the elevation of a female leader more likely. Therefore, we include a lagged running count of female leaders in the same geographic region, *Women leaders, region*.

We also include the *Left ideology* of the leader, based on 'Left" in *execrlc* (Beck et al., 2001), which is extended to cover 1960–1974. Left and center-left parties typically advance

[9] *War* takes the value of one if there is an armed conflict in a given year where fighting caused at least 25 battle-related deaths (Gleditsch et al., 2002).

female equality as one of their programmatic goals and are more likely to have internal female quotas (Krook, 2010; Thames and Williams, 2016).[10] A female leader may be an unusual proposition to the political class or the public at large, particularly when prevailing cultural norms are not accustomed to female country leaders.

Additionally, Jalalzai (2013) finds that women are more likely to gain executive office in parliamentary systems, perhaps due to the fact that women often subscribe to a style of leadership based on consensus-building. Therefore, we add a measure of *Presidentialism* that measures whether the effective political leader is the president (including presidents in semi-presidential systems). We further test whether family ties are particular important when female candidates are subjected to nationwide polls. Arguably, it is not presidential or parliamentary system as such that influences the likelihood of female leadership but the type of selection process that cuts across these regime types. Therefore, we distinguish between elected and selected leaders and posit an additional hypothesis that family ties are especially crucial for women who are elected.

Strictly speaking, all female leaders are elected at some stage, whether as presidents — when they become effective political leaders upon that election, or as vice presidents or the members of parliament. To categorize elected and selected leaders, we therefore distinguish between those who are elected as national leaders,[11] and those who are subsequently selected as such, following election to other positions.[12]

[10]In the appendix, we run a specific test that looks at the effects of quotas on the probability of female leadership, although the data are far more limited.

[11]Out of 51 female leaders, 27 are categorized as "elected". We include directly elected presidents as well as those female leaders who win electoral mandate as party leaders in parliamentary elections, such as Angela Merkel (2005–) of Germany or Margaret Thatcher (1979–1990).

[12]Those who became leaders from within legislatures midterm, i.e., selected by their parties without gaining electoral mandate as leaders, are categorized as "selected." These include

Over time, with the female suffrage in place, women will become more organized into, with their participation being somewhat more normalized in, political life. To that end, in the years following the adoption of female suffrage, we would expect to see not only the emergence of female effective political leaders at some stage but also that women will be more prevalent in politics generally, for example in the legislature. Likewise, there will be the development of formal political institutions that work to attract women in politics, including gender quotas. Unfortunately, variables related to gender quotas or women legislatures fail to to cover all countries for significant periods of time, while our data cover all female leaders around the globe. The inclusion of such explanatory variables would limit the breadth of our analyses considerably. Nonetheless, in appendix, as additional tests of factors behind women in politics, we include supplementary specifications with these variables included.

Results and Discussion

As explained above, we primarily rely on firth logit regression specifications to predict female leadership as a rare event. Conditional logit specification models (fixed effects) with robust standard errors clustered by country are also fitted to account for time-invariant country specific fixed-effects. Table 1 displays the results. Generally, female leaders are more likely to appear when they hail from political families and when female suffrage is in place for a considerable period of time, as indicated by statistically significant coefficients on these variable. Women are

leaders such as Kim Campbell (1993) of Canada, who was selected as party leader and prime minister after Prime Minister Mulroney retired in 1993. In addition, those who assume office in a process of constitutional succession, such as Isabel Peron (1974–76) (even if some of them may be directly elected later, such as Gloria Arroyo (2001–10) of the Philippines who as Vice President was sworn in to the vacant presidency in 2001 and was then elected in 2004), are also included into the category of "selected."

also more likely to rule during a recession — that is, when a crisis preceded their inauguration into office, which gives some support to the "Glass cliff" argument. Women are also more likely to come from left-wing parties than those on the right.

We show the results of the interactive model in column 2, Table 1. While *Political family* and *Female suffrage, years* have positive coefficients and are statistically significant, the interactive term has a negative coefficient and is also statistically significant. Because the model is nonlinear, it is difficult to interpret the effects of the interaction term. Figure 2 therefore, plots the change in the probability of observing a female leader when the value of political ties moves from zero to one over the range of years since female suffrage was introduced. The effect is clearly interactive: when a leader has family ties, the likelihood of such a leader being a woman decreases from 43 percent to just under one percent over the range of suffrage years, i.e., from zero to the level of New Zealand, where women are very active in politics. This indicates that family ties are particularly important when the norm of having women in politics is not established yet. In contrast, for leaders without family ties, the probability goes from zero to 10 percent over the same range, suggesting that family ties do not matter in settings where female participation is routine. That is, at high values of the suffrage years variable (specifically, when many years have passed since the introduction of female suffrage), the effect of family ties is the opposite from the effect of family ties at low values of the suffrage years variable.

[Table 1 ABOUT HERE]
[Figure 2 ABOUT HERE]
[Table 2 ABOUT HERE]

Because we do not compare winning and losing candidates, we cannot infer from our findings that joining a prominent political dynasty or aligning with a center-left party will result in the success of ambitious female politicians. Instead, we focus on the key factors that explain the likelihood of having female leaders across the world, accounting for the rarity of such an outcome. Holding other predictors at their mean levels (Model 1 in Table 1), we estimate that

without a family name, countries see a two percent probability of having a female leader, as opposed to ten percent when such a leader has family ties. When the economy is in dire straits, i.e., at -2 standard deviations below the average value of economic growth, the likelihood of a female leader is 5 percent, as opposed to only 1 percent when the economy is booming. A woman from the center-left party also has a 5 percent probability of becoming a leader. While the effects are statistically significant, substantively the probability figures are very small. This, however, is not surprising since there are only 5 percent of female leaders from 1960–2010.

Additional Tests

In the earlier part of the paper, when we compared the various background and career traits of male and female leaders, we found that alongside *Political family*, women leaders were less likely to hold finance portfolios in the past and are more likely to hold social ministerial portfolios. There was also a large percentage of women leaders elevated from previous vice-presidential posts, but the differences were not statistically significant. Here, we can additionally test if these differences are significant in inferential modelling. Indeed, while many female leaders including Michelle Bachelet (2006–10) of Chile or Helen Clark (1999–2008) of New Zealand may have held social portfolios in their careers, such as those of healthcare or education, numerically, a larger number of male leaders had similar ministerial posts in the past, such as Gosta Ingvar Carlsson of Sweden (1986–91, 1994–96) or Goh Chok Tong of Singapore (1990–2004) who previously were minister for education and housing, and healthcare minister, respectively.

Table 1, Model 3 provides a more nuanced view about differences in political experience and prior careers among female and male leaders in terms of their paths to leadership. This model includes three additional background indicators. The first is a variable that categorizes

whether a political leader occupied a post related to *social and human services*, such as the ministry of health, education, employment, labor, environment, integration or social affairs. Also, to account for the gravitas of their prior careers, we account for whether leaders occupied the second–most important post previously, i.e., that of vice president or prime minister in a presidential regime (*No. 2*). In parliamentary regimes, the second–most coveted post is that of finance or foreign minister, however. Therefore, we also account for whether leaders previously served as *finance or foreign ministers* — posts widely regarded as top ranked in the majority of democratic, or even non-democratic regimes.

Results indicate that women and men are no different in terms of whether they occupied the number-two post in the past, or held the portfolios of finance and foreign affairs. However, there is strong support for the argument that women are indeed more likely to have "feminine" ministerial portfolios during their prior careers. Overall, the addition of three extra background variables does not alter the general results. The coefficients on the interactive term and *Growth, year before* remain significant.

Because the likelihood of having female leaders may be determined by cultural norms prevalent in countries, Models 4–5 in Table 1 include the same variables as in 2–3 but are fitted with fixed effects for country.[13] The results, however, remain similar to those reported earlier: the coefficients on *Political family* and the interactive terms retain their statistical significance.

Table 2, Columns 1–2 includes two model specifications fitted on two separate sub-samples depending on how leaders acquire office. As we discussed above, internal party selection may be easier for women to navigate unaided, in contrast to running as future potential leaders in a general election, where family ties can help overcome voter biases however. Results displayed

[13]The appendix includes more specific tests of the cultural norms that might help women enter high office.

in columns 1–2 in Table 2 indicate that the interactive argument about institutions and political ties holds for elected leaders, but it is much weaker for selected leaders, as the coefficient is only borderline significant in the specification estimated on the "selected" sample. Indeed, family ties may not be crucial if women leaders are selected from within parties or legislatures. It also applies to "selected" interim leaders. For instance, after President Omar Bongo of Gabon died in June 2009, Rose Francine Rogombé, the country's first female senator, served as the interim head of state for four months before the son of the deceased president was sworn in, in October 2009. Arguably, a female president with no political designs of her own represented a safe choice during the uncertainty of succession; she required neither additional networks nor the public acceptance of a woman president.

Possible Confounding Factors

Is it possible that the effects of the female suffrage years are contaminated by other factors? In this section we consider possible confounding factors. The appendix also contains further tests, including alternative specifications to account for the time trend, more detailed tests of whether cultural norms ease the entry of women in political leadership, alternate ways of measuring the variable for female suffrage, and the effects of having female legislators, among others.

First, the extension and duration of the female franchise might be related to a country's democratic record.[14] It is therefore possible that the years of female suffrage merely proxies for the years of democracy, as opposed to capturing the norm of female political participation.

Democracies vary widely in their timing of extending the right to vote to women. In terms of the competitiveness of electoral process, Switzerland had been a democracy for over a century until female suffrage was adopted, in 1971. Many Western nations also introduced female

[14]In all specifications, we already include *Polity 2* to control for the strength of democracy.

suffrage after, not simultaneously with, the adoption of democracy. Furthermore, the majority of postcommunist nations had female suffrage for close to a century but only adopted democracy recently; likewise, many nations that became independent after World War II and where dictatorships quickly took hold, introduced universal suffrage, including female suffrage, right away (Przeworski, 2009). In other words, while female suffrage is somewhat correlated with democracy years (.11) in the estimation sample, democracy is neither necessary nor sufficient condition for female enfranchisement.

Still, to gauge the possible effect of the length of uninterrupted democracy, we conduct additional tests. First, Table 2, Column 3 includes the length of uninterrupted democracy as an additional variable, transformed via an inverse hyperbolic sine transformation in the same manner as *Female suffrage, years*. As can be seen, the main explanatory variables retain their statistical significance, while the length of democracy does not prove to be an important predictor. In turn, Model 4 is specified as the full interactive model and includes the following terms: the old interactive term between family ties and suffrage years; the length of uninterrupted democracy, additionally interacted with *Political family*; and all constituent terms, interacted with one another (Braumoeller, 2004). The results hardly change, providing evidence for the importance of female suffrage years. Second, in the appendix, we conduct additional tests, including mediation analysis, and find no support for the possible hypothesis that the effects of years of democracy are mediated through the years of female suffrage.

We can further test whether the years of female suffrage reflect the effects of other possible omitted variables, such as that of years of male suffrage, or if they capture a mere passage of time. In the first case, the danger is that we are not measuring the normalization of female political participation, but the institutionalisation of electoral participation that often begins with male suffrage. In the second, years since the adoption of female suffrage may merely

reflect the length of time that has passed from early on. For male suffrage, drawing from Przeworski (2015), we measure the length of time from the year when the *suffrage* indicator takes the value of 7, or full suffrage to all. To account for the passage of time, we include the count of years from the year of earliest entry into office in the sample. Since the count of years was already included among polynomial terms, to avoid collinearity and to still be able to account for the time trend, we include year dummy indicators (Model 6). Two new indicators are also transformed via an inverse hyperbolic sine transformation.

Results displayed in Columns 5–6, Table 2, reveal that the coefficients on the interactive terms with new constituent terms are not statistically significant. This offers additional evidence that the effects of female suffrage years are distinct not only from years of democracy but equally from years of male suffrage and the mere passage of time.

In summary, family connections are particularly important for women politicians, but their value diminish when societies accept female political participation as normal. Family ties can provide financing, connections, and name recognition to a candidate, which women need more than men do. While we attempted to account for possible alternative and complementary explanations, as well as for confounding factors, alternative predictors and model specifications cannot be excluded. The supplementary appendix therefore includes specifications with additional explanatory variables, robustness check, alternative models to account for rarity of outcomes on the dependent variable and to account to time trend differently, the Random Forest classification, and mediation analyses. Undoubtedly, cultural norms about the role of women in public life matter for the likelihood of the emergence of female leaders. While fixed-effects estimations account for possible unobservable country-specific parameters, in the appendix we also report additional analyses based on public opinion indicators on the acceptability of female participation.

Conclusion

Using a novel and comprehensive dataset, across a variety of analyses, we show that the backgrounds of effective political leaders do not differ much between men and women, except in one primary respect: their family connections in politics. This background characteristic has a strong influence on the likelihood that women — not men — will hold the highest office in their country. Other background characteristics, such as the level of education and amount of experience, are largely equivalent between the sexes. This suggests that women do not stay out of high-level politics on account of a lack of qualifications. Rather, their networks and connections need to be firmly in place in order for women to climb to the highest ranks in politics. However, the necessity of being part of a political dynasty lessens once the country has experienced female suffrage for a length of time. This interactive effect between background characteristics and the domestic political climate is previously underexplored in the literature on female leadership.

Female leaders often need to compensate for gender biases and structural barriers (e.g., Lawless and Fox, 2010). One such compensatory tool is the availability of family ties that give women access to resources and networks. However, as we find from a variety of analyses, with time, as society gradually accepts women's participation in politics as normal, female politicians no longer need such ties. In other words, many societies may be moving away from the stage where even if a wife is equally competent as her husband, "when his female partner steps up for her turn, she risks being dismissed as a 'wife of' rather than a qualified politician in her own right" (Murray, 2010*a*, 15).

Our findings point the way forward to future research. Further studies could explore the particular types of domestic political institutions that can help voters become more amenable to female candidates. Significant work has already been done on some of these institutions,

including the study of quotas. But quotas are a relatively recent innovation in political life. Historical research could uncover the microfoundations of how political ties could be supplanted by particular domestic conventions.

We hope our findings can to some extent de-stigmatize the family connections that women in politics might need. We have shown that females are no less qualified or experienced than their counterparts in high office. Entrenched modes of thinking in the early days of female political participation, however, may mean that women need an extra boost in terms of networks and support. Happily, the need for such assistance seems to decrease the longer that female politicians are prominent in the political life of their nations.

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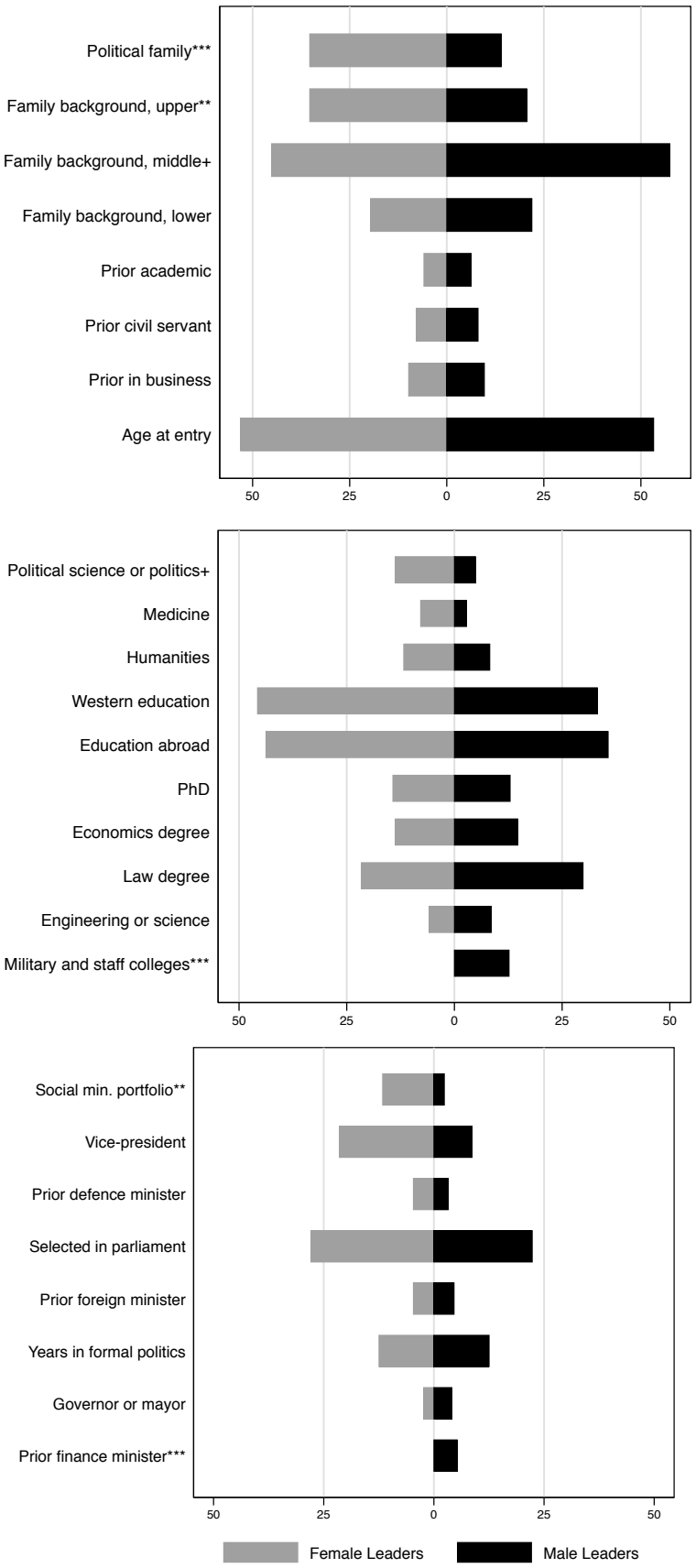

Figure 1: *General Background, Education and Experience of Female Leaders*. Note: Categories report percentage of female and male leaders with particular traits. *Age at entry* and *Years in politics* include the average values. *Western education* excludes leaders of Western nations; *Vice-president* excludes non-presidential regimes. Interim leaders are excluded from the bottom sub-plot. Categories are sorted by relative differences between male and female leaders. Statistically significant differences at + p <0.10, ** p <0.05, *** p <0.01.

	Firth logit			*FE*	
	1:	*2:*	*3:*	5:	*6:*
Political family	1.265***	4.685***	5.039***	6.728***	6.529***
	(0.358)	(1.048)	(1.082)	(1.484)	(1.582)
Female suffrage, years	0.007+	0.011**	0.009**	-0.053	-0.037
	(0.004)	(0.005)	(0.005)	(0.073)	(0.081)
Polit. fam.×Fem. suff.	–	-0.033***	-0.036***	-0.051***	-0.051***
		(0.010)	(0.010)	(0.011)	(0.012)
Democracy	0.016	0.010	0.011	0.161	0.134
	(0.101)	(0.104)	(0.103)	(0.172)	(0.189)
Income pc (log)	-0.591	-0.265	-0.052	0.908	1.712
	(0.489)	(0.509)	(0.501)	(4.013)	(4.533)
Presidentialism	-0.136	0.091	0.023	-0.712	-1.589
	(0.364)	(0.369)	(0.392)	(1.006)	(0.988)
Left ideology	0.629+	0.607+	0.658+	0.804	1.213+
	(0.333)	(0.344)	(0.349)	(0.518)	(0.627)
Growth, year before	-0.055+	-0.062**	-0.064**	-0.082+	-0.089**
	(0.030)	(0.031)	(0.032)	(0.045)	(0.043)
War, year before	0.571	0.578	0.756+	1.758**	1.608**
	(0.429)	(0.435)	(0.441)	(0.758)	(0.808)
Women leaders, region	0.040	0.037	0.027	-0.385**	-0.380**
	(0.055)	(0.056)	(0.056)	(0.156)	(0.140)
No2	–	–	0.802	–	0.499
			(0.595)		(0.713)
Fin. or foreign min.	–	–	-1.243	–	-1.183+
			(0.886)		(0.714)
Social min. portfolio	–	–	1.617**	–	2.969**
			(0.622)		(0.969)
Time	0.626	0.637	0.793	1.575+	1.556+
	(0.653)	(1.168)	(0.530)	(0.938)	(0.866)
Time^2	-0.014	-0.013	-0.016	-0.030	-0.031+
	(0.014)	(0.025)	(0.011)	(0.020)	(0.018)
Time^3	0.000	0.000	0.000	0.000+	0.000+
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-11.461	-14.757	-18.049**	–	–
	(9.719)	(17.358)	(8.309)		
N	781	781	781	294	294
N countries	114	114	114	31	31
Log-likelihood	-102.01	-90.73	-84.60	-54.40	-48.85
Pseudo-r^2	–	–	–	0.311	0.381

Table 1: *Understanding Women Leaders Selection into Office* Note: The sample includes regimes with the *Polity 2* above 0. Models 1–3 are estimated via Firth logit. Models 4–5 are estimated as (fixed-effects) conditional logit model specifications. Significant + p <0.10, ** p <0.05, *** p <0.01.

	Elected		*Suffrage*			
	1: yes	*2: no*	3:	*4:*	*5:*	*6:*
Political family	5.423***	4.038**	5.084***	5.699***	2.262**	2.454+
	(1.480)	(1.753)	(1.087)	(1.287)	(0.736)	(1.364)
Female suffrage, years	0.018**	0.010+	0.018***	0.019**	–	–
	(0.008)	(0.005)	(0.005)	(0.007)		
Polit. fam.×Fem. suff.	-0.036**	-0.034+	-0.035***	-0.036**	–	–
	(0.013)	(0.019)	(0.010)	(0.012)		
Democracy	-0.037	0.129	-0.002	0.028	0.008	0.089+
	(0.155)	(0.154)	(0.107)	(0.112)	(0.106)	(0.049)
Income pc (log)	-1.111	0.948	-0.870	-0.957+	-0.797	-0.647
	(0.773)	(0.743)	(0.549)	(0.580)	(0.523)	(0.426)
Presidentialism	-0.034	1.243+	0.372	0.397	-0.001	0.224
	(0.499)	(0.675)	(0.394)	(0.404)	(0.396)	(0.377)
Left ideology	0.776	0.738	0.541	0.525	0.579	0.543
	(0.484)	(0.527)	(0.362)	(0.361)	(0.355)	(0.334)
Growth, year before	-0.057	-0.084+	-0.062+	-0.066**	-0.062**	-0.007
	(0.044)	(0.044)	(0.032)	(0.033)	(0.031)	(0.030)
War, year before	0.428	1.509**	0.640	0.594	0.581	0.648
	(0.606)	(0.682)	(0.475)	(0.476)	(0.449)	(0.411)
Women leaders, region	0.109	-0.076	0.032	0.027	0.037	0.013
	(0.088)	(0.082)	(0.059)	(0.060)	(0.059)	(0.055)
Years of democracy	–	–	0.004	0.009	0.004	0.004
			(0.003)	(0.006)	(0.003)	(0.003)
Pol. family× Years of dem.	–	–	–	-0.036	–	–
				(0.025)		
Years of dem.× Female suff.	–	–	–	-0.000	–	–
				(0.000)		
Pol. fam.×Years of dem.×Fem. suff.	–	–	–	0.000	–	–
				(0.000)		
Male suffrage, years	–	–	–	–	0.005+	–
					(0.003)	
Political family×Male suffrage	–	–	–	–	-0.007	–
					(0.005)	
Years	–	–	–	–	–	0.243
						(0.233)
Political family×Years	–	–	–	–	–	-0.012
						(0.013)
Time	0.720**	-0.066	0.729**	0.729	0.492+	–
	(0.337)	(0.448)	(0.308)	(0.744)	(0.274)	
$Time^2$	-0.015**	0.001	-0.015**	-0.015	-0.011+	–
	(0.007)	(0.010)	(0.007)	(0.016)	(0.006)	
$Time^3$	0.000+	-0.000	0.000**	0.000	0.000+	–
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
Constant	-13.373**	-9.494	-14.521**	-14.774	-9.435**	-35.588
	(6.609)	(6.663)	(5.320)	(10.972)	(4.620)	(33.646)
Year fixed effects	–	–	–	–	–	yes
N	416	365	750	750	729	1033
N countries	100	87	113	113	112	146
Log-likelihood	-23.15	-22.49	-71.51	-46.19	-76.26	-127.69

Table 2: *Understanding Women Leaders Selection: Additional Analyses* Note: The sample includes regimes with the *Polity 2* above 0. Models 1–7 are estimated via Firth logit. Significant + $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

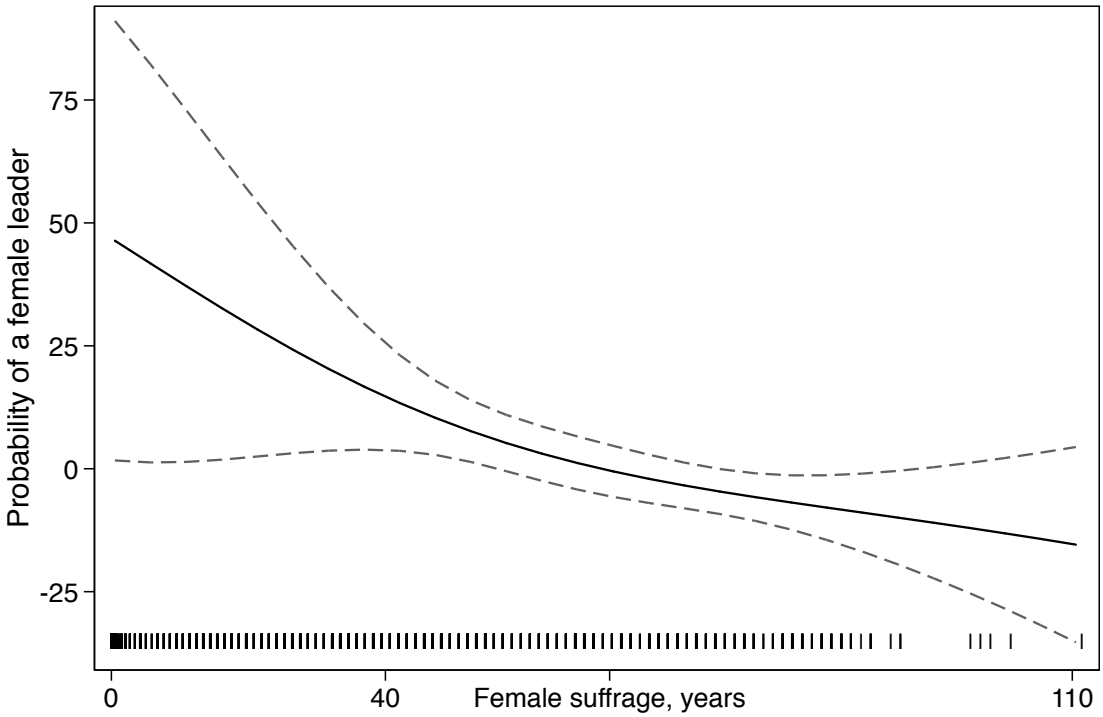

Figure 2: *Declining Importance of Political Family Connections*. Substantive effects of political family on the likelihood of selection of a female leader over the range of female suffrage years, estimated based on Model 2, Table 1 (probit regression specification with errors clustered by country).