Quantifying the Value of a Political Connection: The Case of Presidential Elections in Colombia

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Abstract

What is the value of a political connection? Relying on a novel biographical data set for all presidential candidates in Colombia from 1833 to 2010, in this paper I provide an answer to this question. I consider three types of political networks, depending on whether a presidential candidate was linked to a previous President by being part of his cabinet or foreign service, or linked through family ties. I first show that votes are partially transferable from political parents to candidates that are in each of these three networks: on average, a one standard deviation increase in total votes received by political parents generates a maximum electoral gain of two thirds of a standard deviation for any given candidate. Electoral gains are larger for Interior and Foreign Affairs ministerial positions, intermediate for family and ambassadorial ties, and null for Defense and Treasury cabinet positions. Shared elite education has an equally large effect.

Keywords: Political Networks, Political Dynasties, Economic and Political History, Colombia, Elites.

1 Introduction

What is the value of establishing a political connection? In this paper I seek to answer this question by showing that, at least in the case of Colombia, one may quantify the value of being in a political network in terms of the votes that are partially transferred from political parents to their political children.

In order to accomplish this, I construct a rich biographical data base consisting of all presidential candidates that have run for office in Colombia from 1833 to 2010. The data base

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includes total votes received, as well as information on personal characteristics (age, city and department of birth, gender, political party, school and university attended and degree received) and political experience. Crucially, with this information I am also able to link candidates to previous presidents and candidates whenever they had established in the past a visible working relationship in the cabinet or foreign service, or whether they have any type of family ties.

Controlling for personal characteristics, several measures of political experience and election fixed-effects, I find that, other things equal, a one standard deviation increase in total votes received by political parents generates a maximum electoral gain of two thirds of a standard deviation for a given presidential candidate, on average. The magnitude of this gain depends on the type of political link: while I find no gain for those candidates that were members of a presidential cabinet as Defense or Treasury Ministers, being an ambassador to a previous president results in a marginal gain of one third of a standard deviation, and Interior and Foreign Affairs ministries, as well as family ties, generate the largest electoral gains.

Family ties, or political dynasties, are of interest of their own, as they might be a symptom of entry barriers (and self-selection) to the market for politicians. Restricting the sample to direct elections only I find that family ties have no electoral gain, suggesting that while the members of a political dynasty may find it easier to enter a political network, this early advantage need not translate to higher voting.

I also show the the main finding is robust to two different specifications: first, by focusing only on direct elections I not only guarantee the comparability of total votes received by political parents and candidates, but I also find a cleaner measure of vote transferability by fixing the electoral institution, since this process may be different under direct or indirect elections. With direct election only, the (marginal) value of a ministerial connection falls from almost two thirds to almost one half of a standard deviation, and that of a foreign sector position increases to a little less than almost a one-to-one increase; as discussed before, family ties generate no electoral gain if candidates run for office in direct elections.

Second, I control for potentially confounding effects that may arise from not specifying social (educational) and geographical network electoral gains. The result here is not only that the transferability of votes is still positive and statistically significant, but, most importantly, that being linked to a previous candidate through the school system generates electoral gains as large as the gains from ministerial, foreign service and family networks. The result is striking, as it quantifies very clearly the degree of social stratification implicit in the Colombian political system.

This paper contributes to several literatures in economics and the social sciences. A first and most direct contribution, by quantifying the value of being in a specific (political) network, this paper furthers the study of the effects that social networks have.[1] In political science, an

[1] A textbook treatment of social networks can be found in Jackson (2008).

emerging literature has shown that social networks help increase voter participation (Nickerson (2008) and McClurg (2003)), but also that politicians that are better connected are also more successful (Fowler (2006)).[2] Similarly, Fisman (2001) quantifies the value of political connectedness for firms in Indonesia. A related literature on the effects of social capital has emerged with force in development economics.[3]

The results of the paper are also relevant to the political economy literature on elite persistence and political dynasties.[4] Needless to say, within-network vote transferability is consistent with the view that elites tend to generate (electoral) institutions in order to perpetuate themselves in power. By relying on complete biographical data, I show that an elite social background (as measured, for example, by the school attended) has strong electoral gains. Moreover, as discussed above, I also show that being a member of a political dynasty generates electoral gains, that disappear when I only consider direct elections.

The rest of this paper is organized as follows. In Section 2 I summarize the relevant electoral and political history of Colombia. This knowledge is necessary to understand and qualify the results provided in the empirical Section 4. Data construction, sources and description is provided in Section 3. Section 5 concludes.

2 Historical and Institutional Background

As historian Malcolm Deas has put it succinctly, one of the remarkable features about Colombia is that it "has been the scene of more elections, under more systems— central and federal, direct and indirect— than any other Latin American or European country."[5] This makes Colombia an interesting case study, but at the same time poses certain technical difficulties that must be addressed in the empirical section of the paper. I will first provide a brief historical account of the political and electoral institutions in Colombia, necessary to understand the econometric specifications in the next section.

Even though Colombia declared its independence from Spain in 1819, for the purposes of this paper I will take as a starting point the Presidential elections of 1833.[6] After several

[2] Among other things, Fowler (2006) shows that better connected congressmen and women in the United States are more successful in getting approved the bills they support.

[3] See, for example, Fisman, Paravisini, and Vig (2012), Jackson, Rodriguez-Barraquer, and Tan (2012), Beaman and Magruder (2012). A somewhat out-of-date review of the literature can be found in Durlauf and Fafchamps (2005).

[4] On elite persistence see Acemoglu and Robinson (2008), Acemoglu, Bautista, Querubín, and Robinson (2007) and García Jimeno and Robinson (2010). The main reference on political dynasties is Bó, Bó, and Snyder (2009), but more recent and unpublished contributions are Querubín (2011) and Rossi (2009).

[5] Quoted from Deas (1973) in Posada-Carbó (2000).

[6] In 1819 the *Gran Colombia* is founded, including Venezuela, New Granada (Colombia and Panama) and Ecuador. In 1830 Ecuador and Venezuela secede and the Constitution of 1832 gives birth to the Republic of New Granada. While the name of the country changed several times, hereafter I will use indistinctly the name Colombia.

years of internal turmoil— most prominently the War of the Supremes (1839-41)—, in 1848 and 1849 the Liberal and Conservative parties were founded, and since then, until the end of the 20th century, Colombia remained primarily bipartisan.[7] This bipartisan system has been the source of continued political upheaval— including several civil wars of which one of the most prominent is the *War of the Thousand Days* (1898-1902) after which Panama secedes (1903)— that has shaped Colombian political institutions.[8] The main political cleavages were the structure of internal organization (strong centralized national state or a federal, decentralized regime with state autonomy) and the degree of separation between the state and the Catholic Church.[9]

In order to give a brief historical account on the political institutions in Colombia, one may subdivide the country's subsequent political history in seven distinct periods:[10] (i) during the *Radical Olympus* (1853 - 1885)[11] the Liberal party was (mostly) in power and many radical reforms were introduced, including universal male suffrage and universal primary education, separation between church and State, a decentralized political system and even a Federal constitution in 1863 that gave each of the nine states total political autonomy. (ii) From 1886 to 1930, Conservatives overtook the Presidency in what has been aptly called *the Conservative Hegemony*; a new Constitution was signed in 1886 (except for several amendments it would last until 1991) and the country moved back to a centralized, authoritarian political regime that gave ample power to the Catholic Church. (iii) The period from 1930 to 1946 marks the return of the Liberal party to power (the "Liberal Republic"),[12] (iv) followed by the period known as *La Violencia* (1948-58) characterized by widespread regional political conflict between sympathizers of each party. (v) In the interlude, General Gustavo Rojas Pinilla's military regime was in power from 1953 to 1957, followed (vi) by the bipartisan power-sharing agreement known as the National Front (1958-74) that put an end to the generalized state of public disorder.[13]

[7] While recognizing the bipartisan nature of Colombia's electoral regime, Oquist (1980) also emphasizes the importance of intraparty competition: "In a very real sense it is a misnomer to speak of Colombian politics as being traditionally a two-party system, given the constant proliferation of factions within parties." Quoted in Posada-Carbó (1997).

[8] As the early twentieth century statesman and political analysist Laureano García Ortiz said, the "War of the Thousand Days began in 1840. (...) He meant of course that the war sprang from the same political exclusiveness, regionalism, and elite factionalism that by Jorge Holguín's (President in the early twentieth century) count had generated nine major civil wars, fourteen localized conflicts, three military coups, and two international wars over the first century of national history." (Henderson, 2001)

[9] As Safford (1972) has shown, neither class or occupational differences are important in understanding the differences between the two leading national parties in Colombia. See also Bushnell (1993) and Uribe-Urán (2000).

[10] This division is more or less standard in Colombian historiography. See, for example, Palacios (2007) and Bushnell (1993).

[11] See Jaramillo and Franco (1993).

[12] As Posada-Carbó (1998) ascertains the 1930 elections defined an important turning point in Colombia's political history.

[13] In July 1957 the two leaders of the Liberal and Conservative parties — Alberto Lleras Camargo and Laureano Gómez— signed the Stitges Declaration where they proposed a "National Front". A national referendum was passed in December 1 of the same year where citizens were asked to approve several measures, including full

Since then, (vii) a new Constitution was signed in 1991, broadening political participation to less traditional parties, and party violence was replaced by an internal conflict with communist guerrilla's and drug cartels.[14]

As this historical summary has shown, several periods were characterized either by a clear dominance from one of the parties, or by an explicit power-sharing rule between the two dominant parties, raising the question of how fraudulent and competitive were elections in the period under study. Considering that the main objective of the paper is to quantify the extent to which votes can be transmitted within a political network, this issue is of utmost importance, since in the extreme case of pure electoral fraud transmission of votes is trivial at best.[15]. For this reason, I will now summarize some of the historial evidence on political corruption in Colombia.

First, while not claiming that elections were generally clean, historian Eduardo Posada-Carbó has shown that elections in Colombia were more competitive than most historians have previously assumed.[16] For instance, Bushnell (1971) has shown that the 1856 elections between the Conservative Mariano Ospina Rodríguez (who would win this election), Liberal Manuel Murillo Toro and General Tomás Cipriano de Mosquera were relatively competitive, compared to Latin American standards.[17] Palacios (2007) also argues that compared with elections during the Conservative Hegemony, fraud was less common during the subsequent Liberal Republic.

Second, even when elections were not relatively competitive between parties, there was fierce competition *within* parties. The 1930 "landmark elections" (Posada-Carbó, 1998, 1997) that marked the return of the Liberal party to power, for example, were won by Enrique Olaya Herrera mainly because the Conservative party presented itself divided between two separate factions (led by Guillermo Valencia Castillo and Alfredo Vásquez Cobo).

Third, political upheaval was an indicator of how competitive elections were, or, as Bushnell (1993) says: "the intensity of party competition created a potentially unstable situation; petty outbreaks of violence at the local level were a normal accompaniment of election campaigns, and from time to time general civil war broke out."

Finally, the high degree of electioneering is also indicative of how competitive elections

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political equality for women, a larger share in the national budged for education (at least 10%), restoration of the phrase "God, supreme source of all authority" to the Constitution and a bipartisan government with equal representation for Liberals and Conservatives in all official bodies. The referendum was approved by an astonishing 95% of the votes. Some time later it was proposed that for a 16 year period, Liberals and Conservatives would take turns in the Presidency, and the conservative leader— Laureano Gómez— proposed that the Liberal party, headed by Alberto Lleras Camargo, would be in power from 1958-62. The other Presidents during the National Front were Guillermo León Valencia (Conservative, 1962-66), Carlos Lleras Restrepo (Liberal, 1966-70) and Misael Pastrana Borrero (Conservative, 1970-74).

[14] As the last column in Table (9) in the Appendix shows, the 1991 Constitution had the clear effect of increasing the number of candidates (and parties) that ran for office.

[15] This is the case of the Mexican "dedazo" where a successor to the presidency was chosen by the incumbent. See, for example, Langston (2006).

[16] In particular, see Posada-Carbó (1997) and Posada-Carbó (2000).

[17] See also Bushnell (1993).

were. For instance, during the last quarter of the nineteenth century and the twentieth century, it was not uncommon for a presidential candidate to own his own newspaper, or to be explicitly backed by one.[18] It is also well known that the Catholic Church explicitly supported the Conservative candidates, another reason why the religious theme was so divisive between the two parties.[19,20]

For future reference, Table (1) summarizes the major changes in the electoral rules throughout the period.[21] Until 1936 and with the short exception of the period 1853-63, suffrage was restricted by income, property or literacy requirements. The 1886 Constitution reintroduced literacy and property requirements in order to elect members of the lower chamber and members of the electoral college that would choose the President.[22] The 1910 reforms would introduce direct presidential elections, lower income and property requirements and remove the executive's right to appoint electoral juries (Posada-Carbó, 1997). Women suffrage was granted first during Rojas Pinilla's dictatorship (1954), but since all of the reforms during the military regime were declared null, it was put in place on a permanent basis with the Military Junta 1957 plebiscite. Finally, the 1991 Constitution included, for the first time, a two-round system where, in the absence of winner by absolute majority in the first round, the top two candidates compete again in a second and definite round. Moreover, the Constitution not only decrees the right to establish, support and run for any given party (art.107), but also dictates that the state will partially fund all parties and political movements that have obtained their legal status (art.109).[23] Importantly, the state also partially funds all campaigns, depending on the share of votes they obtain. The significance of this last restriction is worth emphasizing, since under the 1991 Constitution, those candidates who run in the first round knowing that they have no chance of winning the election but hoping that they will be able to be part of a winning coalition (with the corresponding bureaucratic benefits) must expect, a priori, that they will be able to achieve the minimum voting threshold in order to guarantee that the state will payback (some fraction) of their campaign expenses.

[18] See Posada-Carbó (2010).

[19] A clear example is given by Posada-Carbó (1997): "By 1930 Monseñor Ismael Perdomo, the archbishop of Bogotá, was known as the 'elector of electors in Colombia'."

[20] For an empirical test of what came to be know as "El que escruta elige" (*He who counts elects*) see Chaves, Fergusson, and Robinson (2009).

[21] A succinct history of electoral institutions in Colombia can be found in Jaramillo and Franco (1993) or a more authoritative historical treatment can be found in Bushnell (1993).

[22] According to Posada-Carbó (1997), the $500 yearly income or $1500 estate value requirements were not necessarily binding: "Whereas the 1886 requirement of 500 pesos a year excluded most farm laborers and all domestic servants, it was not beyond the means of middle-income groups, such as schoolteachers, clerks, shopkeepers, and miners. (...) By the turn of the century, moreover, given the depreciation of paper money, the agregados and chapoleros of the Hacienda Jonás, for example, were earning much more than the required sum."

[23] To obtain the "personería jurídica" or legal status, a party must obtain at least a 3% share of total national votes in Senate or Chamber of Representatives elections (with the exception of those ethnical and political minorities that are defined in the Constitution). See also *Acto Legislativo 1, 2009*.

Table 1: Summary of Presidential Electoral Institutions

Date	Elections	Restrictions	Criteria†	Term Length (years)
1833-53	Electoral College	Restricted	Abs.Majority	4
1853-1863[a]	Direct	Universal	Rel.Majority	4
1863-1885[b]	States	Restricted	One vote for each of 9 states. Abs.Majority.	2
1886-1910[c]	Electoral College	Restricted	Abs.Majority	6
1910[d]	Direct	Restricted		4
1936[e]	Direct	Universal (males only)		4
1957[f]	Direct	Female suffrage		4
1975[g]	Direct	Minimum voting age is 18 (down from 21)		4
1991[h]	Direct	Universal	Abs.Majority and two-round system with top two candidates.	4

Source: Jaramillo and Franco (1993)

Notes: *a*. 1853 Constitution. *b*. 1863 Constitution. *c*. 1886 Constitution. *d*. *Acto Legislativo No. 3, 1910 e*. *Acto Legislativo No. 1, 1936*. *f*. *Plebiscito del 1 de diciembre de 1957*. *g*. *Acto Legistlativo No. 1, 1975*. *g*. *1991 Constitution*. † *Abs.Majority*.: Absolute majority, otherwise chosen by the Congress. *Rel.Majority*: Relative majority.

Finally, to understand how local politics may have played a role it is also important to briefly describe the political or administrative organization of the country throughout the period.[24] From 1832 to 1858 the fundamental administrative units were the provinces, each divided in cantons and municipalities. The *Granadine Confederation*, created by the 1858 Constitution, increased the provincial autonomy, allowing the creation of states within the country.[25] This effort was deepened with the creation of the *United States of Colombia*— as the 1863 Constitution renamed the country— which not only included the state of Tolima to the list of members of the union, but also, among many other features, granted complete political autonomy to each member state.

The country was renamed again (*Republic of Colombia*) by the 1886 Constitution, which marked the return to a centralized politico-administrative system; *departamentos* took the place of states, which not only lost their previous label but also most of the federalist prerogatives granted by the previous Constitution, most important of all, their political autonomy. Departamentos' maximum executive leaders were the president-appointed *gobernadores*. After a short-term increase in the number of departamentos during Rafael Reyes' (1904-09) administration—

[24] See Aguilera Peña (2002) and Mendoza Morales (1988).

[25] The states of Panama, Antioquia, Santander, Bolívar, Boyacá, Cauca, Cundinamarca and Magdalena came into being, with Bogotá as its federal capital. Interestingly, it was a conservative President (Mariano Ospina Rodríguez) — and not a liberal— who supported and passed this federal constitution.

from the original 9 to 26— by 1948 the country was divided into 15 departamentos, further expanded to 23 between 1951 and 1981.

In order to incorporate some degree of local administrative decision power and control into the highly centralized organization devised a century earlier with the 1886 Constitution, two important innovations were introduced by the liberals in the second half of the twentieth century. The *Juntas de Acción Comunal (JAC)* (community action boards)— introduced by Alberto Lleras Camargo (1958-82)— and the *Juntas Administradoras Locales (JAL)* (local administrative committees) —introduced with the 1968 constitutional amendment (Carlos Lleras Restrepo, 1966-70) and further specified and regulated in 1986 and finally with the 1991 Constitution. Importantly, this additional autonomy was quickly captured by the already present local political bosses.[26] Finally, the 1991 Constitution increased the number of departamentos to 32, and deepened the decentralization efforts of the two previous reforms.

3 Data

Total votes for all presidential elections in the period 1833 to 1990 were taken from Appendix B in Bushnell (1993), and data for all subsequent elections come from official records.[27] As described in the previous section, for all elections after 1991 a two-round system was put in place. The electoral data I use for these elections comes from the first round where (generally) more than two candidates run for office and before the second-round strategic coalitions are formed.

Substantial effort was put into the construction of complete biographical histories for all candidates. Appendix B describes additional sources taken from the internet, and the Additional Biography at the end details some other bibliographical material used in the construction. The general biographical data includes personal data (year, city and department of birth, gender, primary and secondary school attended, university attended and degree obtained) as well as information on political experience for each candidate: ministries occupied (year and under which president), other positions occupied in the legislative (national, departmental or local assemblies as well as members of constitutional conventions, with time and geographical information), executive (mayor, governor or previous presidencies and vicepresidencies,[28] with time and geographical information) and judiciary branches; I also have information on foreign

[26] A vivid description of a local patronage network can be found in Archer (1990). As stated by Palacios (2007), "in the long run (the JACs) served to buy votes."

[27] See the webpage of Colombia's electoral authority *Registraduría Nacional del Estado Civil.*

[28] This also includes information on the figure of Presidential Designate ("designado") that has been substituted several times for the figure of Vicepresident. While the Vicepresident was chosen in the same or independent (direct or indirect) elections as the President, *designados* were generally chosen by the Senate, and both would substitute the President had he not been able to continue.

service experience (location and under which president) and family connections that include ties with other members in the list of presidential candidates and elsewhere in politics.

With this information I am able to construct networks of political connections at different levels, but I focus on three different channels: ministerial, ambassadorial and family ties, i.e. candidates who were linked to a President (or presidential candidate) by being appointed in the cabinet, foreign service, or by (direct or indirect) family connections. Table (2) presents descriptive statistics for all control variables and political networks for Presidents and candidates. Out of the 48 Presidents in the period, 19 (39.5%) were of clear Liberal origin (even if they represented a liberal dissidence), 11 (22.9%) Conservative, 8 (16%) represented a coalition of the two parties, and the remaining cannot be clearly identified along this bipartisan division. More than half of all presidents in the sample (56%) were chosen by direct elections, 16% through an electoral college, and 25% by congressional (or constitutional convention) elections. In terms of the regional composition, almost 30% of the presidents were born in Bogotá, 15% in Cauca, 12.5% in Antioquia, and smaller numbers come from Valle and Santander (an the remaining departments).[29] A vast majority (56%) held law degrees, and four presidents held economics and engineering degrees, each.[30]

In terms of the political experience, Presidents held more than twice as many cabinet positions and embassies than competing candidates, and almost 1.5 times more positions in departmental or local executive branches; these differences are all statistically significant. Interestingly, there is no statistically significant difference between Presidents and competing candidates in terms of legislative experience: on average both held between 2.4 and 2.9 positions in local, departmental or national assemblies.

The second panel in Table (2) reports frequencies in each reported ministry for all Presidents and candidates, as well as the corresponding differences. It is noteworthy that, on average, relative to candidates, Presidents have previously occupied more positions as Defense, Development, Interior, Treasury, Public Instruction and Foreign Affairs. With this criterion in mind, the four more important ministries have been Treasury, Foreign Affairs, Interior and Defense, i.e. two of them related to diplomatic and internal political conditions (Foreign Affairs and Interior), and the others of a more technical nature.

The third panel provides a description of family ties for Presidents and candidates. The only noteworthy difference between successful and unsuccessful candidates has to do with 2nd degree ties— defined as candidates with parents in law, grandparents, siblings, uncles (aunts) and adoptive parents who participated in politics— where Presidents have 2.5 more ties, on average, than candidates. In terms of overall magnitudes, the number of 1st (biological and foster parents) and 2nd degree ties are considerably larger than the number of 3rd degree (great grand-

[29] Departments used here correspond to the current political-administrative organization.

[30] On the occupational distribution of the elites in Colombia see Uribe-Urán (2000).

parents and cousins), and 4th degree ties (great great grandparents and grandparent's siblings).

Two additional pieces of information are necessary to understand the econometric specifications presented in the next section. First, as noted above, the variety of political and electoral institutions makes Colombia a unique case study, but it also presents some challenges for the econometric analysis. Figure 1 and Table (9) in Appendix A present summary statistics at the election level. It can be readily seen that (i) average and total turnout, as well as the variance in the election-specific voting, increase in time and change between electoral systems (direct, electoral college and congressional voting); since the objective is to study the transmission of votes within a political network, it is unclear that the units of account are comparable across election years and electoral systems.[31] I take care of this difficulty by standardizing at the *election level* the number of votes, so that the relevant unit of analysis are election-specific standard deviations.

Also of interest is the interaction of the network structure with the electoral system. Focusing only on ministry, embassy and family networks, i.e. the collection of links between presidential candidates at each of these levels, Table (3) shows that candidates in elections decided by an electoral college or the congress have more links at the ministerial level than those who run for office in direct elections. Focusing only on embassy positions, candidates elected by the congress have a larger number of links than those in the remaining electoral systems, while for family networks there are no notable differences across electoral systems.

[31] For example, if a given president was elected by an electoral college, and his Treasury minister elected through direct elections, we need to be able to convert one electoral vote into units of direct votes.

Table 2: Sample Means for Presidents and Candidates

	Controls		
Variable	Presidents	Candidates	Difference
Liberal	0.396	0.239	0.157*
Conservative	0.229	0.23	-0.001
Direct Election	0.563	0.673	-0.11
Electoral College	0.167	0.159	0.007
Congressional Election	0.25	0.159	0.091
Antioquia	0.125	0.115	0.01
Bogotá	0.292	0.239	0.053
Cauca	0.146	0.071	0.075
Santander	0.021	0.097	-0.077**
Valle	0.042	0.097	-0.056
Law Degree	0.563	0.46	0.102
Economics Degree	0.083	0.035	0.048
Engineering Degree	0.083	0.035	0.048
Total Ministries	2	0.876	1.124***
Total Embassies	1.104	0.531	0.573***
Total Executive	1	0.699	0.301***
Total Legislative	2.896	2.407	0.489
	Ministry Connections		
	Presidents	Candidates	Difference
Agriculture	0.042	0.009	0.033
Trade	0.021	0	0.021
Communications	0	0.027	-0.027*
Defense	0.313	0.186	0.127*
C&T	0.021	0.018	0.003
Development	0.104	0.018	0.086*
Education	0.021	0.027	-0.006
Interior	0.313	0.106	0.206***
Treasury	0.479	0.15	0.329***
Public Instruction	0.083	0.009	0.074*
I&E	0.042	0.053	-0.011
Justice	0	0.018	-0.018
Energy	0.021	0.009	0.012
Public Works	0.083	0.027	0.057
Foreign Affairs	0.438	0.133	0.305***
Health	0	0.018	-0.018
Labor	0.021	0.044	-0.023
Housing	0	0.009	-0.009
Industry	0	0.018	-0.018
	Family Connections		
	Presidents	Candidates	Difference
1st Degree	0.292	0.221	0.07
2nd Degree	0.333	0.133	0.201***
3rd Degree	0.042	0.009	0.033
4th Degree	0.083	0.027	0.057

Notes: Results for test of difference of means. *** Significant at the 99% level, ** Significant at the 95% level, * Significant at the 90% level.

Families ties were classified as follows: Ties with biological parents are classified as 1st degree relations. Remaining ties were classified in terms of the number of (biological or social) steps needed to reach each candidate: 2nd degree ties are those parents in law, grandparents, siblings, uncles (aunts) and adoptive parents, 3rd degree ties are links with great grandparents and cousins, and 4th degree ties are with everyone else (great great grandparents and grandparent's siblings).

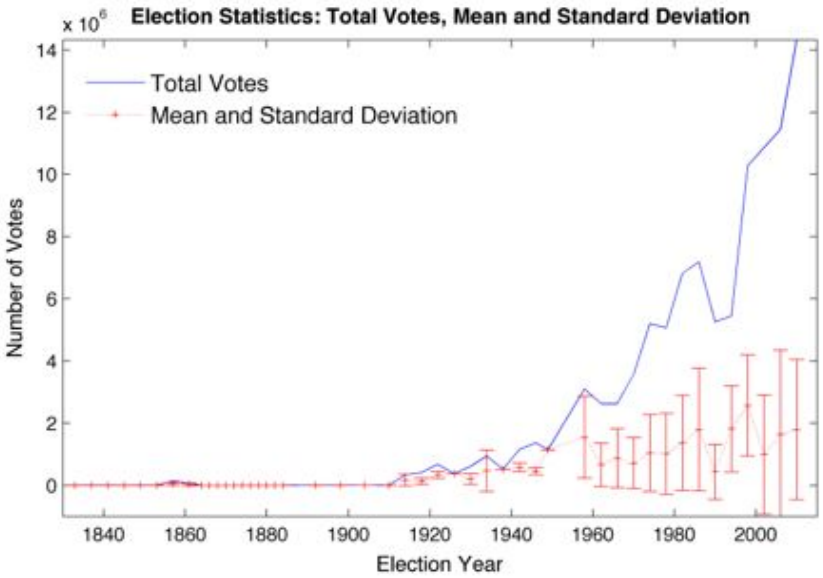

Figure 1: Descriptive Statistics: For each election, the figure shows total and average (per candidate) number of votes, as well as standard deviation. See also Table (9) in the Appendix.

Table 3: Number of Political Connections and Electoral System

	Ministry Network	Embassy Network	Family Network	Nobs
Direct Elections	1.049	0.583	0.456	103
	(0.133)	(0.106)	(0.071)	
Electoral College	1.654	0.654	0.346	26
	(0.228)	(0.235)	(0.123)	
Congressional	1.467	1.1	0.767	30
	(0.274)	(0.268)	(0.149)	

Notes: Table presents average number of political connections between political parents and children for Ministry, Embassy and Family networks for each electoral system. Standard errors in parenthesis. Congressional includes all candidates running for President in elections decided by the Congress or a constitutional convention.

Finally, to get a sense of the structure of the political networks considered here, Figures (2)-(4) display graphically the ministerial, embassy and family networks; remaining networks are displayed in Appendix A. In the figures, time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS-1833) on the horizontal axis (zero degrees in polar coordinates) and finishing with Juan Manuel Santos (JMS), elected president in 2010. Each of the markers corresponds to a candidate, in chronological order, filled (blue) circles denote those candidates linked (with a line) to any other candidate in the network, and filled (red) diamond-shaped markers correspond to Presidents, labeled also with their initials.[32]

[32]For a list of Presidents see Table (10) in Appendix A.

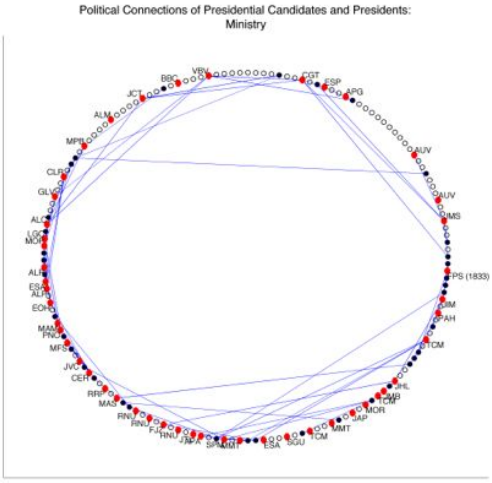

Figure 2: Ministry Network: Figure displays the Ministry network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents. A line is traced between any presidential candidate that was part of a cabinet of a previous president.

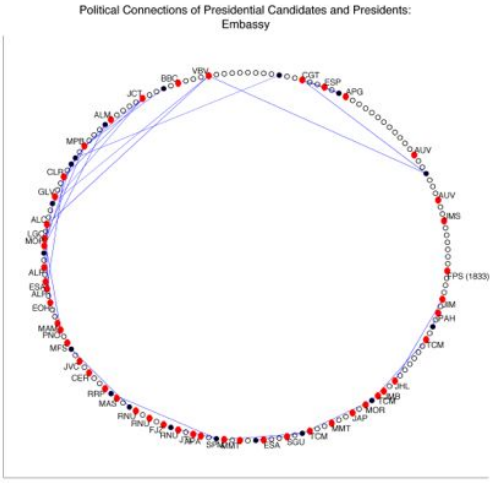

Figure 3: Embassy Network: Figure displays the embassy network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents. A line is traced between any presidential candidate that was part of a cabinet of a previous president.

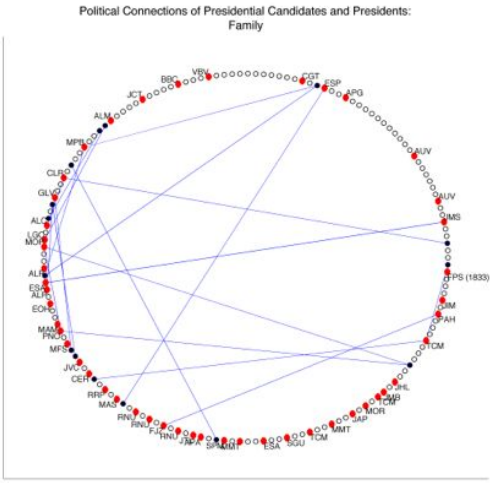

Figure 4: Family Network: Figure displays the department network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents. A line is traced between any presidential candidate that had any family ties with a previous candidate.

4 Results

As discussed above, I wish to estimate the causal effect that being in a specific political network has on the voting outcome in presidential elections in Colombia. Denote by $C = \{1, 2, \cdots, N\}$ the set of presidential candidates. For every candidate $i \in C$, denote by $p(i) \subset C \cup \emptyset$ the set of *political parents* of i. A political parent is defined as any other candidate $j \in C$ in *previous* elections such that there is a link between the two candidates. One can define analogously the set of political grandparents $p(p(i))$, and so on. In line with this parental metaphor, in what follows I will use interchangeably the terms *inherit* and *transfer from* to refer to the transmission of votes from political predecessors. As shown in the previous section, there are many possible ways two candidates may establish a political relationship, and each of these is captured by a contiguity matrix W, where $w_{ij} = 1$ if and only if $j \in p(i)$.

In what follows I estimate regressions of the type:

$$v = \rho_1 W v + \rho_2 W^2 v + X\beta + \epsilon \tag{1}$$

where v denotes the total number of votes for all candidates in vector form, W^2 is a contiguity matrix (of order two) such that $w^2_{ij} = 1$ if candidate i can be connected to candidate j through a path of length two, X is a vector of individual and election controls and ϵ is a vector of unobserved disturbances. For ease of interpretation in the results that follow I use *row-normalized* versions of each contiguity matrix, so that $[Wv]_i$ corresponds to average votes that i inherits from parents $p(i)$, and the same logic applies for political grandparents.

ρ_1 and ρ_2 are the parameters of interest.[33] Since W is a (row-normalized) contiguity matrix, ρ_1 is the effect on candidate i's total votes received if we marginally increase her parents' average vote, i.e. it provides a measure of how transferable are, on average, the votes received by political parent j onto political child i. ρ_2 is interpreted analogously but now replacing political parents for grandparents.

Several points are worth discussing before presenting the results. First, the relation between a political connections and voting results may be two-way: while it is possible that the political network affects voting outcomes— the causal effect I want to estimate—, it is also true that some of the political relationships I may observe in my data result from a strategic exchange of votes for power, i.e. cases where a candidate j, who knows that she cannot win the election, trades (some fraction of) her potential votes with i in exchange for a position in the government. To ensure that this is not the case, I only consider political links with parents that ran for office

[33] One could in principle estimate the causal effect for any political connection of order M. However, since the political networks that I consider are not dense— i.e. the corresponding contiguity matrices W are relatively sparse— so that W^k converges very quickly to the zero matrix, as k grows large. For this reason I only consider first and second-order political connections.

in *previous* elections, so that the formation of the link precedes the voting result.

Second, it is possible that the observed correlation between votes received by political parents and their children is caused by a third unobserved factor, such as the ability to convince other people (both, voters and political parents), higher public exposure because of the political connection, the fact that they both belong to a grander network (eg. political party, region, city, etc.), or simply due to the natural endogeneity of the political links (i.e. candidates i and j both have their own clientele and, depending on their relative sizes, they optimally choose to create a political connection, so that ρ_1 and ρ_2 can no longer be interpreted as the causal effect from political parents to political children, but rather as the average joint effort of all political links). In order to minimize the likelihood of this happening, I include a set of individual controls, such as the undergraduate degree obtained, the city and department where the candidates were born, age, gender, and some measures regarding their political experience (number of previous positions in the cabinet, foreign service, executive and legislative branches, as well as number of family relationships in politics).

Finally, as shown in the previous section, the electoral system in Colombia has changed several times since the first election in 1833. In all of the results that follow I always standardize all variables at the election level; while demeaning with respect to a particular election is equivalent to including election fixed-effects, I also standardize in order to facilitate the interpretation of the results. Estimates for the key parameters do not vary significantly when I do not transform the data, and are available from the author upon request.

Table (4) shows the first set of results, where I consider three classes of political connections: being part of the cabinet of a previous president (Ministry), being an ambassador to a foreign country (Embassy) and having a direct familial connection to someone who has run for office (Family). For each of these political networks I estimate two models using two different methods: I first estimate a restricted version of Equation (1) where I only include the regressors of interest Wy, W^2y, then I estimate the full version where I control for individual characteristics. In regards to the estimation method, in all specifications I use OLS, but I either allow for clustered standard errors at the election level (CR) or I estimate the parameters by FGLS where the correction of the residuals is made at the election level again.[34]

Except for the intracabinet political connections (Ministry), estimates of the parameters of interest with either estimation method are similar, but as expected, FGLS provides the more efficient results. Interestingly, I find that for the three political networks a non-negligible fraction of the average votes received by political parents are transferred to their political children. On

[34] Assuming the exogeneity of the political network and the correct specification of the econometric model, thanks to the lagged nature of the political networks parameters in Equation (1) can be estimated consistently through OLS. To verify this claim I also estimated the model with spatial econometric techniques that control for this type of spatial endogeneity (see Arbia (2006)) but estimates did not vary significantly. Results are available upon request.

average, a one standard deviation increase in votes from political parents represents an increase of almost 0.60, 0.35 and 0.64 of a standard deviation if the candidate was a member of the cabinet, an ambassador or family related to a previous candidate, respectively. As Figure (1) and Table (9) in the Appendix show this magnitude is non-negligible.

Interestingly, with the exception of the foreign service networks, the second-order effect ρ_2 is generally negative and statistically significant. To understand this finding, one must remember that since $\rho_1 \in (0, 1)$ each child inherits some of her political parents' votes, who themselves inherited some of their votes from their own political parents, implying that the second-order effect— from grandparent to child— is somewhat redundant. One may even ascertain that the extent that votes are transferable from the political lineage is concave in the degree of the relationship. To see this, notice that, on average, for each additional vote that grandparents $p(p(i))$ get, i inherits $\rho_1^2 + \rho_2$, so the net transfer from the grandparents is positive or negative depending on the sign of this sum. Using results from FGLS estimation and the full model, Table (5) shows that the net effect is in fact very close to zero, so that direct transfer of political votes from political grandparents ρ_2 cancels out with the indirect channel ρ_1^2.

Estimated parameters for the controls are of interest by themselves. Other things equal, votes are increasing and concave in the candidate's age, male candidates get a larger number of votes than their female counterparts, with the "male premium" being almost half a standard deviation for each election's voting; except for the family network specification, a liberal party candidate has no advantage and candidates from Antioquia get, on average, between one third and one half of a standard deviation higher vote than candidates from other departments. Candidates with a law, economics or engineering degrees tend to get more votes than candidates with other degrees, but results suggest that the premium is higher for economists, engineers and lawyers, respectively.

Turning to the political experience variables, having won the elections previously (PresNum) gives somewhat of an advantage, but the estimated effect is significant only for the ministry specification. On the other hand, each additional time a candidate has *run* for office in the past (CanNum) increases the number of votes by a magnitude ranging from one fourth to one half of a standard deviation. Even after controlling for network effects, being in the cabinet more times (NMin) increases the average vote. Both of these effects are probably due to public exposure. Interestingly, this is not the case with the number of times a candidate has been an ambassador (NEmb), has held public office at the local executive level (NEje)— depending on the specification this might actually be harmful in terms of electoral results—, or has been elected to the national or local assemblies (NLeg). Finally, there is some evidence that having more relatives in politics helps a candidate in a presidential election, but the effect is not robust to different specifications.

These results are novel and important since they show that one may quantify the value

of a political connection in terms of the votes that are partially transferable. However, these gross political networks aggregate some possibly contradicting effects, and it is likely that some ministries, embassies or family connections have larger, lower or even null effects. While we have information on each ministry, embassy and type of family tie, only for Defense, Interior, Treasury and Foreign Affairs ministries is the information substantial enough to further pursue the investigation of the transferability of votes (see Table (2)).

Table (6) presents the results from estimating Equation (1) using the networks for the four most popular ministries: Defense, Interior, Treasury and Foreign Affairs. Once again I present the restricted and complete specifications, and all parameters were estimated with FGLS.[35] The results show that out of the four cabinet positions considered, being a Minister of Defense or Minister of the Treasury generate no political gains— measured by the the transferability of votes from political parents. On the other hand, dealing with internal or external politics generates high political dividends: on average, a one standard deviation increase in the number of votes for a given president increases by more than half a standard deviation the number of votes received by their own Ministers of the Interior and Foreign Affairs. Importantly, this effect remains after controlling for individual characteristics.

In what follows I present two additional robustness checks. First, I reestimate the first and second order degree of votes transferability only for candidates who participated in direct elections. While standardizing the number of votes at the election level allows me to control for systematic differences in the mean and variance of total votes, it is possible that political connections have a differential effect under different electoral systems, so by focusing only on direct elections I can verify that my results are not driven by this type of misspecification (Table (3)).

I also control for additional unobserved political effects that may arise because political parents and children may come from a similar social background, such as being born in the same city or department, or having studied in the same school or university. This is important, because of the potential role played by a candidate's social standing and local political connections may have played.[36] In practice, I will estimate regressions of the form

$$v = \rho_1 W v + \rho_2 W^2 v + \rho_s W_s v + X\beta + \epsilon \tag{2}$$

where W_s denotes the contiguity matrix for social dimension s— department,city, school

[35]Due to the lack of political connections, I only estimate first-order effects. Including higher order of connections generates perfect mulicollinearity.

[36]Hierarchical segmentation in Colombia, as well as in most of the rest Latin America, has well known colonial origins. For Colombia, see the (rather informal) treatment in Kalmanovitz, López, López, Brando, Jaimes, and Vidal (2010). More generally, the long run causes of inequality in Latin America have been discussed in the seminal work of Engerman and Sokoloff (2006) and Acemoglu, Johnson, and Robinson (2002).

and university—, and the other variables remain the same as before.

Table (7) presents the results from estimating Equation (1) using only the subset of candidates running for office in direct presidential elections, estimated with FGLS. While most results remain qualitatively the same, two results are remarkable: first, I find no effect for family connections on the transferability of votes. Recall that there are at least three reasons why some votes may be transferable between members of a political dynasty — the *dauphines* as they are known in Colombia[37]: first, it may just be easier for someone with family members in politics to enter a political network and establish links with other members;[38] also, a family name may act as signal about some specific abilities held by previous family members (a learning explanation); finally, a local electorate may be captured by these political "caudillos" or "caciques".[39] Since the last two channels should be at work in both, direct and indirect elections, but more strongly in the former, it appears that the only the first channel may help explain this finding: members of an electoral college, congress or constitutional convention are more likely to vote for a candidate with political connections than the general public.

The second finding is that relative to the previous results, when one considers only direct elections the strength of the transferability of votes decreases for ministerial connections and increases for foreign service connections: on average, a one standard deviation increase in votes received by a political parent increases by almost half a standard deviation the number of votes that the corresponding candidate gets. On the other hand, there is almost a one-to-one correspondence between votes obtained by a political parent and their ambassadors who decide to run for office.[40] One possible explanation for this phenomenon has to do with accountability and visibility: with direct elections the electorate may punish more easily the members of a presidential cabinet just because their actions are not only more visible, but may also affect them in a more direct way.

The results from estimating Equation (2) with the full sample but controlling for regional (at the city and department levels), school and university network effects are presented in Table (8).[41] Consistent with the previous results, I again find that having connections at the cabinet, foreign service or family levels with political parents increases the number of votes received when the political child runs for office. While positive and statistically significant, I find that the

[37]The actual name in Spanish is "delfín", a direct translation from the french title *dauphine* that was customarily given to the heir to the French throne.

[38]On this, see Archer (1990) who interviewed one of those descendants of what he calls "natural leaders".

[39]"Caudillos"– i.e. local political bosses that exert considerable influence on local politics— have been recognized as important actors in Latin American politics, see e.g. Skidmore, Smith, and Green (2009), or the classical reference Chapman (1932). For the specific case of Colombia see Archer (1990) or Deas (1973).

[40]Notorious cases of candidates who were ambassadors at the time of their nomination were Rafael Núñez, consul at Le Havre and Liverpool in the previous ten years after his first nomination, and Enrique Olaya Herrera (1930-1934) who was plenipotentiary in Washington D.C.

[41]The same individual controls used in the previous estimations were also included but are not reported. All of the results are qualitatively the same.

estimated effects are smaller (Table (4)) when I control for the direct electoral effect of sharing a regional or schooling network: the marginal effect that average political parents' received votes reduces by almost a half for the first two political networks, and to a less extent for family connections.

Spatial networks are important to control for since, as discussed above, local "caudillos" have been found to be important actors in Colombian politics. Specifically, it is possible that the correlation found between a political parent and her children is driven by the fact that they belong to a local political network and not because votes are directly transferable. I first find that votes are not generally transferable because of a shared city or department of origin: I find a positive effect for department-specific heritability of votes, but this is statistically significant only for foreign service political networks (embassy). Interestingly, a marginal increase in the votes received by a political parent born in the same city ($CtyNetxVotes$) *reduces* the number of votes her children receives. It is important to note that this result is obtained once we control for department and schooling networks, which might already be capturing the local transferability of votes.

The social dimension is captured by the schooling network controls ($SchNetxVotes$ and $UniNetxVotes$, i.e. average votes transferred from political parents who studied in the same school or university). The evidence in this sense is strong and shows that the Colombian schooling system has been a place where political elites create important political bonds. For the three political networks considered, on average, a one standard deviation increase in votes received by political parents that studied in the same school increases voting obtained by their political children in more than a third of standard deviation, even after controlling for all other individual and social factors. To put this in context, this effect is stronger than the one obtained by being an ambassador, and comparable in magnitude as having a direct family or ministerial tie with a previous president. I also find an additional positive and statistically significant (except for ambassadors) voting effect of around two standard deviations if a candidate went to the same university as their political parents.

Table 4: Dependent Variable: Number of Votes (OLS Estimates)

	Ministry				Embassy				Family			
	CR	FGLS	CR	FGLS	CR	FGLS	CR	FGLS	CR	FGLS	CR	FGLS
FOxVotes	0.323	0.6***	0.373**	0.62***	0.234	0.344**	0.337	0.35**	0.679***	0.922***	0.637***	0.649***
	(0.21)	(0.08)	(0.16)	(0.09)	(0.25)	(0.17)	(0.25)	(0.16)	(0.15)	(0.05)	(0.22)	(0.13)
SOxVotes	-0.104	-0.276***	-0.163	-0.302***	-0.057	-0.032	0.011	-0.108	-0.434	-0.464**	-0.31	-0.495**
	(0.21)	(0.09)	(0.19)	(0.08)	(0.28)	(0.21)	(0.25)	(0.15)	(0.28)	(0.2)	(0.29)	(0.22)
Age			4.123*	3.754***			2.644	2.144			2.506	2.237
			(2.35)	(1.08)			(2.24)	(1.35)			(2.25)	(1.37)
Age^2			-4.278*	-3.993***			-2.79	-2.364*			-2.608	-2.397*
			(2.37)	(1.07)			(2.26)	(1.34)			(2.24)	(1.35)
Male			0.461***	0.416***			0.472***	0.502***			0.378**	0.441***
			(0.16)	(0.11)			(0.16)	(0.13)			(0.16)	(0.15)
Liberal			0.087	0.074			0.058	0.057			0.151	0.216***
			(0.11)	(0.06)			(0.12)	(0.08)			(0.11)	(0.07)
PresNum			0.264	0.249**			0.258	0.215			0.228	0.085
			(0.21)	(0.12)			(0.22)	(0.14)			(0.22)	(0.14)
CanNum			0.31**	0.53***			0.356**	0.463***			0.245*	0.45***
			(0.15)	(0.07)			(0.15)	(0.09)			(0.14)	(0.08)
Law			0.2*	0.232***			0.159	0.193**			0.194*	0.236***
			(0.11)	(0.06)			(0.11)	(0.08)			(0.11)	(0.08)
Eco			0.638***	0.775***			0.707**	0.652***			0.708***	0.603***
			(0.24)	(0.18)			(0.29)	(0.24)			(0.25)	(0.21)
Eng			0.383*	0.561***			0.329	0.575***			0.316	0.386***
			(0.23)	(0.12)			(0.22)	(0.12)			(0.25)	(0.12)
Hac			0.019	-0.032			-0.018	-0.018			-0.016	-0.036
			(0.2)	(0.1)			(0.19)	(0.1)			(0.18)	(0.07)
NMin			0.07	0.196***			0.181*	0.355***			0.142	0.316***
			(0.1)	(0.07)			(0.1)	(0.07)			(0.09)	(0.06)
NEmb			0.014	0.01			-0.134	-0.098			0.026	0.043
			(0.1)	(0.05)			(0.14)	(0.09)			(0.11)	(0.06)
NEje			0.002	-0.106*			-0.013	-0.124*			0.068	-0.03
			(0.1)	(0.06)			(0.11)	(0.07)			(0.11)	(0.07)
NLeg			0.037	0.073			0.048	0.05			-0.003	-0.009
			(0.11)	(0.06)			(0.11)	(0.07)			(0.1)	(0.07)
NFRel			0.109	0.193***			0.065	0.127			-0.02	0.058
			(0.13)	(0.07)			(0.13)	(0.08)			(0.12)	(0.08)
Antioquia			0.321*	0.395***			0.377**	0.449***			0.31*	0.35***
			(0.19)	(0.11)			(0.18)	(0.11)			(0.16)	(0.12)
Bogotá			0.052	0.005			0.136	0.156*			0.043	0.006
			(0.12)	(0.08)			(0.12)	(0.08)			(0.12)	(0.08)
Cauca			0.116	0.022			0.139	0.016			0.129	0.043
			(0.22)	(0.14)			(0.22)	(0.15)			(0.24)	(0.15)
Santander			-0.099	-0.207			-0.126	-0.158			-0.063	-0.185
			(0.18)	(0.13)			(0.19)	(0.14)			(0.2)	(0.16)
Valle			0.045	-0.02			-0.031	-0.068			0.033	0.047
			(0.15)	(0.09)			(0.19)	(0.12)			(0.17)	(0.12)
R^2	0.04	0.17	0.21	0.73	0.02	0.05	0.2	0.93	0.07	0.39	0.23	0.99
N	161	161	142	142	161	161	142	142	161	161	142	142

Notes: *** Significant at the 99% level, ** Significant at the 95% level, * Significant at the 90% level. All variables have been standardized with respect to each election. **CR:** OLS with cluster-robust (at the election level) standard errors. **FGLS:** FGLS with random effects at the election level.

Table 5: Net Transfer From Political Grandparents

	Ministry	Embassy	Family
ρ_1	0.62	0.35	0.649
	(0.09)	(0.16)	(0.13)
ρ_1^2	0.384	0.123	0.421
	(0.035)	(0.020)	(0.055)
ρ_2	-0.302	-0.108	-0.495
	(0.08)	(0.15)	(0.22)
$\rho_1^2 + \rho_2$	0.082	0.015	-0.074
	(0.12)	(0.17)	(0.28)

Notes: Standard errors computed using the delta method.

Table 6: OLS Results: Different Ministries

	Defense		Interior		Treasury		Foreign Affairs	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
FOVotes	0.333**	0.211	0.829***	0.635***	0.518***	-0.09	0.443***	0.589***
	(0.15)	(0.15)	(0.06)	(0.09)	(0.12)	(0.19)	(0.13)	(0.15)
Age		1.815		2.183*		1.934		1.263
		(1.29)		(1.16)		(1.31)		(1.48)
Age^2		-2.041		-2.389**		-2.172*		-1.518
		(1.28)		(1.16)		(1.29)		(1.47)
Male		0.439***		0.42***		0.46***		0.326***
		(0.13)		(0.11)		(0.14)		(0.12)
Lib		0.143**		0.08		0.13*		0.2***
		(0.07)		(0.06)		(0.07)		(0.06)
PresNum		0.26**		0.196		0.216		0.187
		(0.12)		(0.12)		(0.13)		(0.13)
CanNum		0.389***		0.421***		0.358***		0.472***
		(0.07)		(0.07)		(0.08)		(0.08)
Der		0.21***		0.2***		0.217***		0.223***
		(0.08)		(0.06)		(0.08)		(0.08)
Eco		0.733***		0.472***		0.669***		0.534**
		(0.22)		(0.17)		(0.25)		(0.25)
Eng		0.495***		0.574***		0.555***		0.721***
		(0.14)		(0.11)		(0.14)		(0.13)
Hac		0.005		0.049		0.076		0.161*
		(0.1)		(0.09)		(0.13)		(0.1)
NMin		0.322***		0.264***		0.355***		0.201***
		(0.06)		(0.05)		(0.07)		(0.08)
NEmb		0.029		0.068		0.029		0.019
		(0.06)		(0.05)		(0.07)		(0.06)
NEje		-0.114		-0.05		-0.11		-0.156**
		(0.07)		(0.06)		(0.07)		(0.07)
NLeg		0.077		0.032		0.071		0.076
		(0.07)		(0.05)		(0.07)		(0.07)
NFRel		0.162**		0.224***		0.123		0.036
		(0.07)		(0.07)		(0.08)		(0.08)
Antioquia		0.387***		0.456***		0.446***		0.407***
		(0.12)		(0.1)		(0.12)		(0.1)
Bogotá		0.013		0.03		0.118		0.189**
		(0.09)		(0.08)		(0.09)		(0.08)
Cauca		-0.045		0.078		0.082		0.22*
		(0.16)		(0.15)		(0.15)		(0.13)
Santander		-0.21		-0.15		-0.127		-0.147
		(0.14)		(0.13)		(0.15)		(0.14)
Valle		-0.054		0.064		0.014		-0.017
		(0.11)		(0.09)		(0.12)		(0.12)
R^2	0.03	0.62	0.28	0.71	0.1	0.69	0.06	0.93
Nobs	161	142	161	142	161	142	161	142

Notes: *** Significant at the 99% level, ** Significant at the 95% level, * Significant at the 90% level. All regressions include election fixed effects and direct elections control. All variables have been standardized with respect to each election. Estimation method was FGLS with random effects at the election level.

Table 7: Robustness Check: Direct Elections Only

	Ministry		Embassy		Family	
	(1)	(2)	(1)	(2)	(1)	(2)
FOxVotes	0.447**	0.482***	0.867***	0.938***	0.801***	0.067
	(0.18)	(0.11)	(0.09)	(0.22)	(0.11)	(0.16)
SOxVotes	0.104	-0.157	-0.481***	-0.641***	-0.598**	0.003
	(0.19)	(0.11)	(0.15)	(0.19)	(0.25)	(0.19)
Age		1.569		1.005		0.904
		(1.52)		(1.79)		(1.78)
Age^2		-1.703		-1.112		-1.02
		(1.52)		(1.79)		(1.77)
Male		0.594***		0.629***		0.695***
		(0.14)		(0.15)		(0.16)
Liberal		0.001		0.006		0.107
		(0.08)		(0.09)		(0.09)
PresNum		0.155		-0.091		0.049
		(0.16)		(0.21)		(0.21)
CanNum		0.303**		0.27**		0.114
		(0.11)		(0.13)		(0.11)
Law		0.281***		0.291***		0.232**
		(0.1)		(0.1)		(0.1)
Eco		0.714***		0.842***		0.57**
		(0.16)		(0.22)		(0.22)
Eng		0.403***		0.46***		0.381**
		(0.13)		(0.16)		(0.15)
Hac		0.314**		0.237*		0.36**
		(0.14)		(0.14)		(0.17)
NMin		0.027		-0.056		0.082
		(0.08)		(0.1)		(0.09)
NEmb		-0.01		-0.091		0.152
		(0.09)		(0.13)		(0.09)
NEje		0.048		0.21*		0.094
		(0.11)		(0.12)		(0.12)
NLeg		-0.164**		-0.217***		-0.184**
		(0.07)		(0.07)		(0.07)
NFRel		0.396***		0.305***		0.303***
		(0.08)		(0.09)		(0.1)
Antioquia		0.734***		0.729***		0.779***
		(0.12)		(0.14)		(0.14)
Bogotá		0.141*		0.177		0.236***
		(0.07)		(0.12)		(0.08)
Cauca		0.245		0.459*		0.228
		(0.23)		(0.23)		(0.27)
Santander		0.234		0.377*		0.258
		(0.17)		(0.19)		(0.18)
R^2	0.18	0.83	0.35	0.93	0.25	0.85
Nobs	103	84	103	84	103	84

Notes: *** Significant at the 99% level, ** Significant at the 95% level, * Significant at the 90% level. All regressions include election fixed effects and direct elections control. All variables have been standardized with respect to each election. Estimation method was FGLS with random effects at the election level.

Table 8: Robustness Check: Department,City,School and University Networks

	Ministry		Embassy		Family	
	(1)	(2)	(1)	(2)	(1)	(2)
	Political Network ($\rho_1 Wv$)					
FOxVotes	0.299***	0.335***	0.122	0.186*	0.477***	0.402***
	(0.09)	(0.09)	(0.1)	(0.1)	(0.09)	(0.12)
	Regional and Social Networks ($\rho_s W_s v$)					
DepNetxVotes	-0.154*	0.126	-0.084	0.184*	-0.078	0.104
	(0.08)	(0.09)	(0.09)	(0.1)	(0.09)	(0.11)
CtyNetxVotes	-0.127	-0.251**	-0.135	-0.165	-0.152	-0.215*
	(0.09)	(0.11)	(0.1)	(0.12)	(0.09)	(0.13)
SchNetxVotes	0.643***	0.346***	0.665***	0.364***	0.468***	0.381***
	(0.08)	(0.08)	(0.08)	(0.09)	(0.08)	(0.1)
UniNetxVotes	-0.12	0.192***	-0.082	0.096	0.043	0.159**
R^2	0.28	0.79	0.27	0.81	0.72	0.89
Nobs	161	142	161	142	161	142

Notes: *** Significant at the 99% level, ** Significant at the 95% level, * Significant at the 90% level. All regressions include individual controls, election fixed effects and direct elections control. All variables have been standardized with respect to each election. Estimation method was FGLS with random effects at the election level.

5 Discussion and Conclusions

Using a novel biographical database for all presidential candidates since 1833 in Colombia, in this paper I have quantified the value of a political connection in terms of the number of votes that are partially transferable from political parents to their children. I find that after controlling for individual characteristics, political experience and other local social networks, being connected to someone who has ran for office in the past increases the number of votes received by any specific candidate; importantly, the electoral gain can be quantified as *a fraction* of the votes received by the candidate's political parents.

While this result is quite general and robust to different specifications, the quality and strength of a political connection matter too: for instance, using a subsample of all direct elections I find that family connections appear to have no impact on political performance, at odds with the corresponding finding using the full sample of elections. This suggests that while they may find it easier to enter a political network, members a political dynasty need not see this early advantage transfer into higher voting.

In contrast, being part of a political parent's government as a member of the cabinet or the foreign service generally benefits a presidential candidate: as a member of the cabinet, it is better to be directly involved with politics either as Minister of the Interior or Foreign Affairs rather than being in the more technical Treasury or Defense ministries. The former, on average, receive almost two thirds of each additional (marginal) standard deviation of votes received by their political parents; the latter appear to receive nothing.

Given that a positive correlation was found, one may wonder whether this also a causal effect, since there are several reasons one may suspect the finding to be spurious: first, it is possible that causation runs from votes to political ties, and not otherwise; i.e. that a political connection is established using as inputs potential electoral turnout that each candidate has. Second, it is possible that a third unobserved factor affects both the probability of establishing a political link and actual voting received; examples are individual characteristics that make a candidate more appealing both to another candidate and the general electorate (or electors) such as outstanding rhetorical ability, or belonging to a social or regional network that allows a candidate to capture a fraction of the electorate, and at the same time secure political support from other local or national politicians.

I have tried to address both of these issues by restricting the analysis to those political connections that are formed prior to each election, and also by including a full set of individual characteristics in order to control for such unobserved effects. By retaining only those connections that precede the election, the former guarantees that the inverse causal relation is not at play. In the latter case, controlling for political experience (number of times in the cabinet, foreign service and local and national executive, legislative or judiciary branches) and social

and regional backgrounds (education, city and department, as well as the interaction between the corresponding networks and voting) should minimize the likelihood that a third unobserved factor explains the estimated correlation between political parents' and children received votes. Nonetheless, the issue of network endogeneity is a concern that needs to be addressed in future research.[42]

A theme that was not addressed in this paper and a topic of future research is the identification of the actual transmission channel. At this point I may only hypothesize that one of several mechanisms may be at play: consistent with the result that some ministerial positions matter more than others, votes may be transmitted from political parents to candidates through positive (or nonnegative) public exposure.[43] This alone, however, is not sufficient to generate the result obtained, since some foreign service positions offer exactly the opposite of constant media coverage.[44] Even though Colombian presidential elections have been relatively competitive throughout the period under study (Section 2) it is also possible that some fraction of votes are transmitted through fraud. Nonetheless, this story alone cannot explain the findings since it is unclear that some ministerial positions are more prone than others to be rewarded with fraudulent behavior. Third, the transmission of votes may only be apparent if candidates learn from their political parents electioneering techniques that allow them to capture some of the votes that supported them.

[42]The literature on network endogeneity is still on its infancy. Intuitively, one may integrate out the network structure, but this is is computationally intensive as the probability of a given network potentially involves $N(N-1)$ dyadic probabilities, so the integration may not be computationally feasible. See, for example, Goldsmith-Pinkham and Imbens (2011).

[43]It is possible that what matters is public recognition, so that media coverage can be positive or negative.

[44]One example is Noemí Sanín who ran for office three times (1998,2002,2010) and had been ambassador at Venezuela under President César Gaviria (1990-94), United Kingdom under President Ernesto Sámper (1994-98) and Spain and United Kingdom under President Álvaro Úribe Vélez (2002-06).

Appendix A: Additional Statistics

Table 9: Election Descriptive Statistics

Election Year	Total Votes	Avg. Votes	Std.Dev	No.Candidates
1833	1133	566.5	630.0	2
1837	1466	366.5	244.2	4
1841	1554	518.0	122.3	3
1845	1487	495.7	256.6	3
1849	1693	241.9	250.3	7
1853	1877	938.5	862.0	2
1857	138462	46154.0	46115.8	3
1861	60645	30322.5	39857.5	2
1864	9	3.0	2.6	3
1866	9	3.0	3.5	3
1868	9	3.0	2.6	3
1870	9	3.0	2.0	3
1872	9	3.0	2.6	3
1874	9	4.5	2.1	2
1876	9	3.0	1.7	3
1878	9	9.0	0.0	1
1880	9	4.5	3.5	2
1882	9	4.5	4.9	2
1884	9	4.5	2.1	2
1892	2584	1292.0	1107.3	2
1898	2045	681.7	806.5	3
1904	1976	988.0	8.5	2
1910†	43	14.3	11.0	3
1914	337499	168749.5	186655.7	2
1918	407134	135711.3	99900.6	3
1922	669850	334925.0	111290.1	2
1926	370493	370493.0	0.0	1
1930	607553	202517.7	173214.3	3
1934	942209	471104.5	661432.6	2
1938	511947	511947.0	0.0	1
1942	1147806	573903.0	140383.3	2
1946	1366095	455365.0	104215.6	3
1949	1140122	1140122.0	0.0	1
1958	3097809	1548904.5	1320937.0	2
1962	2622107	655526.8	692694.3	4
1966	2623302	874434.0	947504.0	3
1970	3564527	712905.4	814332.5	5
1974	5199536	1039907.2	1235930.0	5
1978	5060555	1012111.0	1300192.6	5
1982	6816414	1363282.8	1522480.6	5
1986	7178123	1794530.8	1973913.5	4
1990	5245281	437106.8	888063.2	12
1994	5447222	1815740.7	1382640.0	3
1998	10278164	2569541.0	1629705.4	4
2002	10855529	986866.3	1920735.7	11
2006	11435637	1633662.4	2717580.3	7
2010	14317278	1789659.8	2255765.3	8

Notes: † A Constitutional Convention elected the President.

Table 10: Presidents and Labels Used in Figures

Year	Label	Full Name
2010	JMS	Juan Manuel Santos
2002	AUV	Álvaro Uribe Vélez
1998	APG	Andrés Pastrana Arango
1994	ESP	Ernesto Samper Pizano
1990	CGT	César Gaviria Trujillo
1986	VBV	Virgilio Barco Vargas
1982	BBC	Belisario Betancur Cuartas
1978	JCT	Julio César Turbay Ayala
1974	ALM	Alfonso López Michelsen
1970	MPB	Misael Pastrana Borrero
1966	CLR	Carlos Lleras Restrepo
1962	GLV	Guillermo León Valencia Muñoz
1958	ALC	Alberto Lleras Camargo
1949	LGC	Laureano Eleuterio Gómez Castro
1946	MOP	Mariano Ospina Pérez
1934	ALP	Alfonso López Pumarejo
1930	EOH	Enrique Olaya Herrera
1926	MAM	Miguel Abadía Méndez
1922	PNO	Pedro Nel Ospina Vásquez
1918	MFS	Marco Fidel Suárez
1914	JVC	José Vicente Concha Ferreira
1910	CER	Carlos Eugenio Restrepo Restrepo
1904	RRP	Rafael Reyes Prieto
1898	MAS	Manuel Antonio Sanclemente Sanclemente
1882	FJZ	Francisco Javier Zaldúa
1880	RNU	Rafael Núñez Moledo
1878	JTL	Julián Trujillo Largacha
1876	APA	Aquileo Parra
1874	SPM	Santiago Pérez Manosalva
1870	ESA	Eustorgio Salgar Moreno
1868	SGU	Santos Gutiérrez
1864	MMT	Manuel Murillo Toro
1861	JAP	Julio Arboleda Pombo
1857	MOR	Mariano Ospina Rodríguez
1853	JMB	José María Obando
1849	JHL	José Hilario López
1845	TCM	Tomás Cipriano de Mosquera
1841	PAH	Pedro Alcántara Herrán
1837	JIM	José Ignacio de Márquez
1833	FPS	Francisco de Paula Santander

Notes: Table excludes Presidents who were reelected: Tomás Cipriano de Mosquera (1845, 1861 (military coup), 1866), Manuel Murillo Toro (1864,1872), Rafael Núñez Moledo (1880,1884,1892), Alfonso López Pumarejo (1934,1942),Álvaro Uribe Vélez (2002,2006)

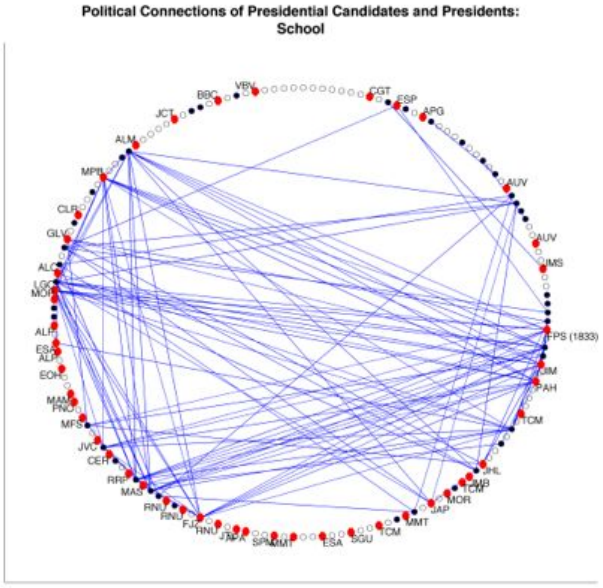

Figure 5: Notes: Figure displays school network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

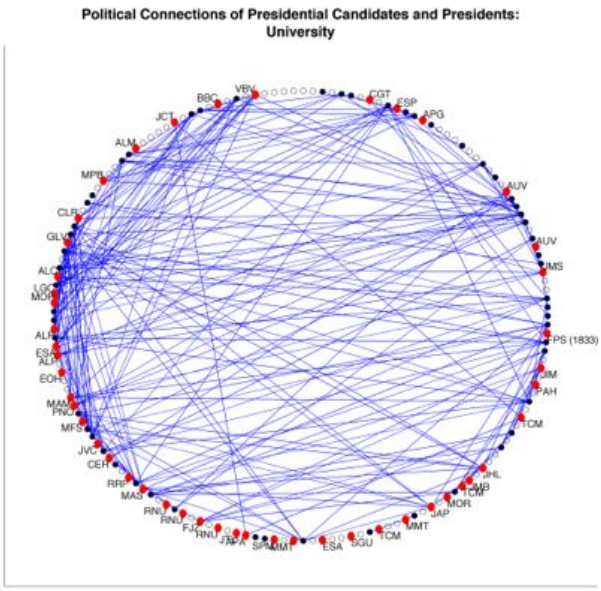

Figure 6: Notes: Figure displays the university network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

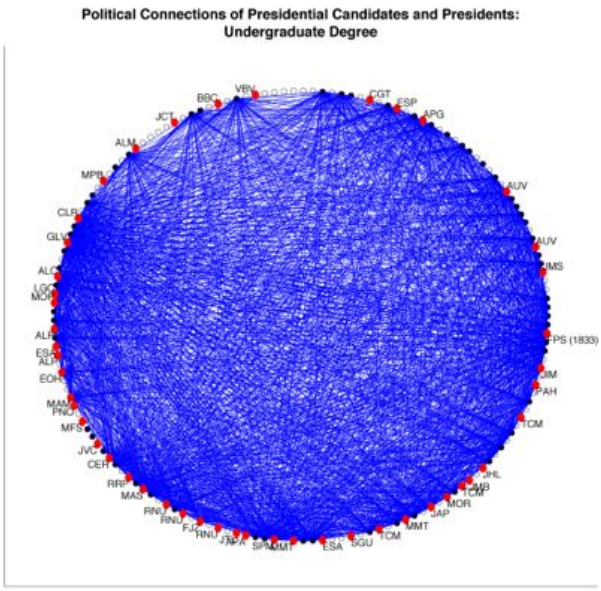

Figure 7: Notes: Figure displays the undergraduate degree network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

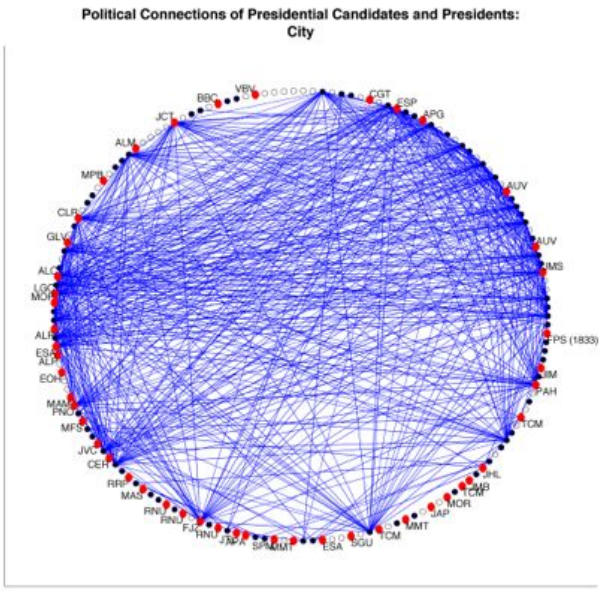

Figure 8: Notes: Figure displays the city network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

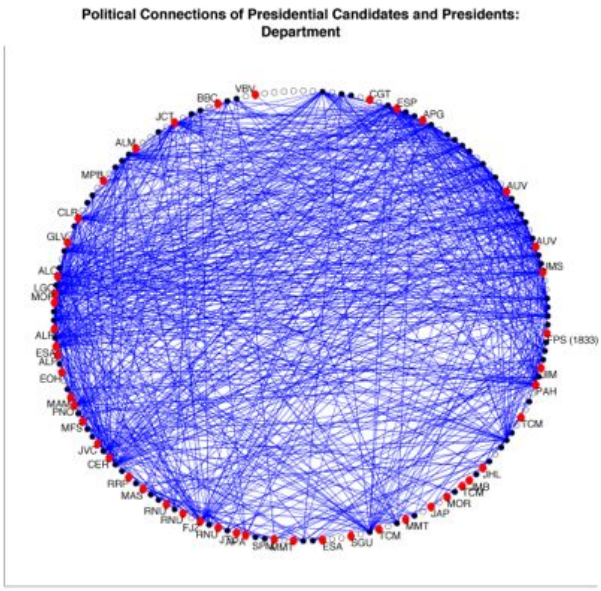

Figure 9: Notes: Figure displays the department network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

Appendix B: Biographical Sources

Table B.1. Internet Sources

Name	Website	Description
Presidencia de la República	*web.presidencia.gov.co/asiescolombia/ presidentes/01.htm*	Biographical information for all presidents starting with Simón Bolívar and ending with Álvaro Uribe Vélez. Constructed by the Colombian national government during President Uribe's mandate.
Biblioteca Virtual Biblioteca Luis Ángel Arango	*www.banrepcultural.org/blaavirtual/biografias*	Biographical information on presidents, ministers, ambassadors, and other illustrious Colombians. Includes very large digital archive with all issues of Revista Credencial Historia (magazine), as well as a large digital archive of several national and regional newspapers starting in the 19th century and the biographical volume of the *Gran Enciclopedia de Colombia del Círculo de Lectores*. Constructed and maintained by country's largest public library (and funded by Colombia's Central Bank)
BioSiglos	*biosiglos1.blogspot.com*	Biographical information on many presidents and statesmen from Colombia and the world.
Centenario del Nacimineto del doctor Jorge Leyva Durán	*somosconservadors.org/pcc/frontend.php /Noticias/post/id/848*	Biographical information on Jorge Leyva Durán (1962 Presidential Candidate)
Latin American Elections Statistics (UC San Diego)	*libraries.ucsd.edu/locations/sshl/ resources/feautred-collections/latin-american-elections-statistics/colombia/*	Large bibliographical and quotations collection for elections starting in 1810 and finishing in 2000. Maintained by UC San Diego.
Political Database of the Americas: Colombia	*pdba.georgetown.edu/ElecSys/Colombia /colombia.html*	Maintained by the Center for Latin American Studies at Georgetown University, contains information on the electoral system, political parties and other political dimensions of interest, at a comparative level for several countries in Latin America.
Diccionario Biográfico Ecuador	*www.diccionariobiograficoecuador.com*	Maintained by Ecuadorian biographer and historian Rodolfo Pérez Pimentel, includes biographical information of several *Gran Colombian* statesmen that were born or lived temporarily or permanently in Ecuador (eg. Bartolomé Calvo)
Biografía de Jaime Hernando Pardo Leal	*www.revistacontornojudicial.com/adjunts/ biografia_jpl1.pdf*	Biographical information on 1986 presidential candidate Jaime Pardo Leal.
Wikipedia article on Colombian Elections	*es.wikipedia.org/wiki/Elecciones _presidenciales_en_Colombia*	Contains statistics and information for all elections in Colombia (article in Spanish).

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