

NEPOTISM: ONE CONCEPT, THREE MEASUREMENT STRATEGIES

Nepotism: One Concept, Three Measurement Strategies. A Comparative Analysis in the Mexican Judiciary

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ABSTRACT

Nepotism has attracted growing scholarly and policy interest as it has proven resilient to reforms in the civil service and other state institutions, undermining public confidence and the provision of public goods and services. Empirical studies on nepotism implicitly acknowledge that it is composed of two distinguishable attributes, a family tie and its misuse, but most of them measure only one of them casting doubt on their conclusions. This paper provides a clear definition of nepotism, unpacks the concept, and evaluates the validity, reliability, and replicability of three measurement strategies to capture it systematically: matching surnames, identifying family ties, and surveying perceptions. We illustrate each measure making use of a wealth of original data from the Mexican Federal Judiciary, offering practical tools for producing an accurate diagnosis of the extent and depth of nepotism in an organization as a key first step to effectively address its causes or its consequences.

Keywords: Nepotism, Concept Construction, Concept Measurement, Mexican Judiciary

RESUMEN

El nepotismo ha atraído un creciente interés académico y político, ya que ha demostrado ser resistente a las reformas en la función pública y otras instituciones estatales, socavando la confianza pública y la provisión de bienes y servicios públicos. Los estudios empíricos sobre el nepotismo implícitamente reconocen que está compuesto por dos atributos distinguibles, un lazo familiar y su mal uso, pero la mayoría de ellos solo miden uno de ellos, lo que pone en duda sus conclusiones. Este documento proporciona una definición clara del nepotismo, desglosa el concepto y evalúa la validez, confiabilidad y replicabilidad de tres estrategias de medición para capturarlo sistemáticamente: el emparejamiento de apellidos, la identificación de lazos familiares y el sondeo de percepciones. Ilustramos cada medida haciendo uso de una gran cantidad de datos originales del Poder Judicial Federal de México, ofreciendo herramientas prácticas para producir un diagnóstico preciso de la extensión y profundidad del nepotismo en una organización como un primer paso clave para abordar efectivamente sus causas o consecuencias.

Palabras clave: Nepotismo, Construcción de Conceptos, Medición de Conceptos, Poder Judicial México



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I. INTRODUCTION

In Latin American democracies, many institutional reforms carried out during the transitions from authoritarian rule have been poorly enforced or unable to resist counterpressure, falling short of their intended goals (Persson, Rothstein, and Teorell 2013; Brinks, Levitsky, Murillo 2020: 1). This is the case with reforms seeking to professionalize the civil service and the functioning of core state institutions (Cortazar et al. 2014). Despite civil service reforms, the persistence of connections and discretion over professional qualifications and impersonal procedures in the recruitment, promotion, assignment, and removal of public servants has been linked to poor economic performance (Evans and Rauch 1999), ineffective provision of public goods and services (Pepinsky, Pier-skalla, and Sacks 2017), and citizen mistrust in state institutions (Dahlström, Lapuente, and Teorell 2012). The lack of strong civil service and professional bureaucracies has been pointed out as a key determinant of developing democracies' fall in a "middle-quality institutional trap" (Mazzuca and Munck 2021).

Nepotism has attracted growing scholarly interest as it has proven resilient to reforms in the civil service and other state institutions. Recent studies explicitly consider improper employment of family members in a diversity of public forums such as academia and university admissions (e.g. Lentz and Laband 1989; Allesina 2011; Durante et al. 2011; Abramo et al. 2014; Grilli and Allesina 2017; De la Croix and Goñi 2021), bureaucracies and public-sector jobs (e.g. Scoppa 2009; Sundell 2014; Gagliarducci and Manacorda 2016; Chassamboulli and Gomes 2019; Ragauskas and Valeškaitė 2020; Riaño 2021), and judiciaries (e.g. Bagües and Volart 2010; Borrego 2017; Brassiolo et al. 2021). Within Latin America, nepotism is on the spotlight across a diversity of settings such as the regional political institutions in Peru (e.g. Dammert and Sarmiento 2019), public employment in Brazil, Colombia, and Chile (Martini 2012; Barozet et al. 2020; Riaño 2021), and the judiciary in Mexico and Argentina (Ríos-Figueroa 2018; Brassiolo et al. 2021; Castagnola and González-Ocantos 2022).

This scholarship has provided valuable insights and empirical assessments on nepotism and its effects. However, taken together the studies display considerable ambiguity in defining the concept of nepotism as well as a broad range of differences on the validity, reliability, and replicability of the measures devised to capture it. These conceptual ambiguities and un-assessed measurement strategies could affect the identification and diagnosis of nepotism and its effects and, of course, hinder devising potentially helpful treatments in actual cases. For instance, whether nepotism goes beyond kin-based relationships to include discrimination in favor of friends has quite important implications for policies intended to limit or contain such practice within an organization (e.g. Chassamboulli and Gomes 2019. See also Signell and Thornton 1997; Hillmann 2001). Also, the diagnosis of the depth and extent of nepotism in an organization can differ widely depending on whether nepotism is measured through administrative records, non-perception surveys, or through counts of repeated surnames (e.g. Scoppa 2009; Borrego 2017; Grilli and Allesina, 2017; Chassamboulli and Gomes 2019; Riaño 2021).

This paper clarifies the concept of nepotism and discusses the advantages and shortcomings of three measurement strategies to capture it systematically. First, we unpack the concept of nepotism and identify two theoretically relevant attributes (Munck and Verkuilen 2002): a family tie and its instrumental (mis)use to obtain a position or an advantage that would not be obtained without the connection. Whereas scholarly studies generally recognize these two attributes most measure only one of them, casting doubt on the conclusions. For instance, the first part of the concept, the family tie, is straightforward: the co-sanguine or legal link between two individuals at different degrees (e.g. father-son is a co-sanguine link in the first degree whereas uncle-nephew is of the third degree). The second part, the misuse of the link to favor relatives, is harder to identify and measure but central to the concept since there can be family related co-workers who do not use their connection for preferential treatment. Unpacking the two attributes of the concept, therefore, highlights the consequences of employing different measurement strategies and methodologies because some of them are good at capturing only one attribute. For instance, straightforward measurements of family links captured from administrative records require additional evidence of their misuse within the organization to adjudicate whether nepotism is taking place (as in Riaño 2021, or De la Croix and Goñi 2021).

Second, we evaluate the advantages and shortcomings of three different measurement strategies to empirically assess nepotism: matching surnames, identifying family ties, and surveying perceptions. We evaluate the validity, reliability and replicability of each measure. Finally, we illustrate each measure by making use of a wealth of original data from administrative records, lists of public employees, and perception surveys on the Mexican Federal Judiciary. This exercise allows us to look at the same underlying phenomenon through different angles in order to highlight the critical importance of the connection

between concept and measurement. Our aim is to provide conceptual and methodological tools for diagnosing the extent and depth of nepotism in an organization, taking into account the type of data that is available and the trade-offs involved in using a particular methodology. Better diagnosis of nepotism is key to understand its causes and to design policies aimed at addressing its pernicious consequences for the construction of professional bureaucracies.

II. NEPOTISM: CLARIFYING AND UNPACKING THE CONCEPT

We define nepotism as the preferential treatment on the basis of family ties and not of merit for the concession of public or private jobs, contracts, or positions. This definition aims at clarifying a concept that is often ambiguously stated in both empirical studies and specialized dictionaries. Among the former, for instance, Singell and Thornton (1997: 905) consider nepotism in rather broad terms as the “biased hiring of relatives and friends.” Chassamboulli and Gomes (2019: 2) also include non-family relatives in their understanding of nepotism as the “restriction that some jobs in the public sector are reserved for a subset of workers that have political or personal connections.” Some definitions include only family members in the concept of nepotism, but rather arbitrarily restrict the type of family relationships, such as De la Croix and Goñi (2021: 2) who define nepotism as “children benefited from their parent’s social connections to get jobs ahead of better qualified candidates” (De la Croix and Goñi 2021: 2). Others (e.g. Sundell 2014: 3) include “relatives” in general without specifying the specific relationships (whether consanguine or legal, for instance). The clearer definitions in empirical scholarship define nepotism as “the practice of favouring members of a network based on their family ties, independent of their actual qualifications” (Durante et al. 2011: 2), or the practice of favouritism toward close relatives regardless of their merit (Allesina 2011: 1), and some studies clearly distinguish that they refer to the non-elected public sector officials and also distinguish whether they focus on recruitment and/or the performance of the individuals while on the job (Riaño 2021: 2).

Specialized dictionaries also display a range of definitions of nepotism. For instance, the *Encyclopaedic Dictionary of Sociology* defines nepotism as “favouritism and preferential treatment, that damages the principles of fair competency, in favour of relatives or friends by influential persons with access to public or private resources” (Hillmann 2001: 638). Transparency International, in the context of institutional employment, defines nepotism as a “form of favouritism based on acquaintances and familiar relationships whereby someone in an official position exploits his or her power and authority to provide a job or favour to a family member or friend, even though he or she may not be qualified or deserving.”¹ Whereas the previous definitions

¹ “Nepotism - Corruptionary A-Z.” Transparency.Org, www.transparency.org/en/corruptionary/nepotism. Accessed 18 Aug. 2022.

include friendship relationships within the concept of nepotism, others restrict the concept family relationships such as Gianfranco Pasquino's in the *Dictionary of Politics* who defines nepotism as "the concession of public jobs or contracts on the basis of family ties and not of merit" (Pasquino 2005: 377). Similarly, the *Oxford English Dictionary* provides a family-related definition of nepotism as "the showing of special favour or unfair preference to a relative in conferring a position or a job."²

We argue that nepotism should be conceptually focused on family relationships (and use, for instance, the concept of cronyism for preferential treatment of friends or acquaintances). We also argue, in agreement with practically all extant definitions, that what distinguishes nepotism from other behaviours involving family relationships is that it involves a corrupt, deviated, or unfair practice. Finally, we argue that this unfair or corrupt practice biased in favour of relatives can take place either in the public sector (if we take the generally accepted definition of corruption as "the use of public resources for private gain") or also in a broader set of private practices (understanding corruption in a more general sense as a "dishonest or fraudulent conduct", *Oxford English Dictionary*). In sum, building upon the extant definitions and aiming at clarification, we define the concept of nepotism as the preferential treatment based on family ties and not of merit for the concession of public or private jobs, contracts, or positions.

We are now in a position to unpack the concept of nepotism into two distinct attributes (Munck and Verkuilen 2002): a family tie and the misuse of it –that is the basis for undue preferential treatment. The family tie can be consanguine or legal (in first, second, third or fourth degrees) and, in principle, it is both observable and verifiable (subject to data availability and, in the case of public servants, transparency laws and potential restrictions on the disclosure of personal information). The misuse of the tie, in turn, can take place in the form of preferential hiring, promotion, or general treatment in the workplace either in the public or the private domains. The second attribute of the concept, the misuse of the family tie, often requires additional, and separate, evidence since it is entirely possible that family relatives working in the same place do not engage in undue preferential behaviour. Two persons who meet on the job and get married, for instance, obviously could not have used their newly acquired family link to get a preferential treatment for recruitment. It is also possible that family relatives working in the same place disclose their link and recuse themselves for a specific job if one of them considers that the connection implies a conflict of interest. Following Goertz (2006: ch. 2) we thus argue that each of the attributes in the concept of nepotism is necessary and neither is sufficient; what is sufficient for nepotism is the joint identification and presence of both attributes.

² Oxford English Dictionary, www.oed.com/view/Entry/123151?redirectedFrom=nepotism. Accessed 18 Aug. 2022.

It is also important to clarify nepotism and distinguish it from related concepts like family heritage and meritocracy. De la Croix and Goñi (2021) differentiate between the misuse of family ties that leads to misallocation of talent³ and the positive effects of “inherited human capital.” Lentz and Laband (1989) note advantages for children in professions with a family history, such as better access to information and social networks, finding that college graduates whose parents are Medical Doctors have 14% greater probability of being accepted in Medical School, controlling for their CVs. Bagües and Volart (2010) find higher success rates in exams for entering the judiciary for relatives of legal professionals in Spain, and studies on the Italian public sector show job and pay advantages for those with public servant fathers (Scoppa 2009; Gagliarducci and Manacorda 2016).

Inherited human capital differs from unfair family tie exploitation. Whether this advantage aligns with meritocracy and equality of opportunity is debatable. Meritocracy, often seen as nepotism’s opposite, varies in interpretation. A rather shallow conception emphasizes impartiality in examinations but overlooks diverse applicant backgrounds like “inherited human capital.” A deeper conception, such as “fair equality of opportunity” acknowledges unequal merit development opportunities, recognizing family heritage as an intrinsic advantage undermining equal opportunity (Daniels 1978: 209).

Social mobility literature highlights that meritocratic systems may not ensure equality when capabilities are transmitted across generations, leading to persistent advantages and inequalities. Wealthier backgrounds, illustrated by household income, create an uneven playing field in meritocratic recruitment. Sandel (2021) emphasizes this issue in the US university application process: a household with more economic resources provides the children access to better education, training, social status, and network connections, hence more chances of being admitted to top universities. Sandel (2021) argues that merit is often intertwined with economic advantages and family heritage but Abramo et al. (2014) offer a different perspective. They measure nepotism by assessing individual performance and career advancement finding that children of academics, even if poor performers, don’t surpass in career advancement better performers without academic parents. While not addressing the broader debate on “meritocratic equality of opportunity” and “fair equality of opportunity,” this suggests that it is feasible to empirically assess the impact of family background separate from that of job performance.

³ This hypothesis is consistent with the literature that poses that family ties have positive effects on institutional performance because relatives have aligned incentives and are more willing to “run the extra mile” (cfr. Jaskiewicz et al. 2013; Toral 2021; Oliveros 2021). It is also possible that in contexts of institutional uncertainty or potential arbitrariness in external revisions, for example, family ties provide the loyalty and trust among the members of an organization necessary to make it work.

III. MEASURING NEPOTISM

Measures of concepts can be evaluated according to their validity, reliability, and replicability (Adcock and Collier 2001). Validity refers to the extent to which a measure corresponds to the concept that it is intended to capture. Reliability refers to the extent to which the measurement process repeatedly and consistently produces the same score for a given case. Replicability refers to the ability of third-party scholars to reproduce the process through which a measure is created. We evaluate the three main types of measures and methodologies to capture nepotism: surname-based approach, direct family ties, and perception surveys.

Matching surnames

The basic idea is to count the occurrence of repeated surnames to account for the magnitude of nepotistic relationships. Allesina (2011) justifies the use of matching surnames as a proxy of nepotistic relations arguing that the levels of homonymity in places where nepotism occur must be larger than expected at random. A simple procedure is to count how many members in, for instance, Italian academic departments share the same surname (Durante et al. 2011). However, the mere counting of surnames is not enough since a standard is needed to assess whether that number can be considered evidence of nepotism. Gagliarducci and Manacorda (2016) use an “external” standard: they compare the number of shared surnames in Italian public offices with the number of shared surnames in private companies, both in the same municipality. Grilli and Allesina (2017) use an “internal” standard: they count the number of shared surnames in Italian academic departments and compare the probability of observing a higher or equal number of shared surnames with what would be expected at random. Sundell (2014) uses a mixed standard: he calculates the number of dyads (pairs of family links) in the Swedish federal administration and the number of dyads within each agency and obtains the probability that two randomly drawn persons that work in the same agency share the same surname.

The methodology of matching surnames captures only one attribute of the concept of nepotism, the family ties, but not the misuse of such ties. Moreover, not all the people who share a surname are family related (Ferlazzo and Sdoia 2012). Because sharing surnames does not necessarily imply family relationships, Ferlazzo and Sdoia (2012) consider that this strategy increases the chances of overrepresenting family ties. However, Allesina (2011) argues that this homonymity measure will underestimate nepotism because matching surnames only identifies consanguineous (and not legal or affinity) relations. Perhaps the main advantage of this measure is that it makes it possible to build a probabilistic model for finding family ties with a relatively easy-to-find source of information (a list of full names), and to map and weigh family networks within institutions.

This measure also exhibits other weaknesses. First, as mentioned, analyzing shared surnames only captures first-degree family ties (e.g. father-son, brother-sister) thus leaving out other family relationships (e.g. second cousins) and most legal relationships of affinity (e.g. spouses who do not change their name or nephews by marriage) (see Durante et al. 2011). Second, and most important, when a randomizing process is taken into consideration it assumes that the distribution of the sample used in the analysis resembles the population. Therefore, information on the population is also required or, alternatively, a large enough sample of it that could serve as a representative sample. Ideally, disaggregating the data should be possible at different levels (e.g. national, subnational, local levels; or national public sector, ministries, divisions, departments, offices) so the randomization could be done at more specific levels to minimize the measurement bias due to the geographical concentration of surnames.

Family ties

This measure traces back the family links within an organization using archives, administrative records, bibliographic references, non-perception surveys or any other source that allows for unambiguously identifying the family relationship between two (or more) individuals. However, as is the case with matching surnames, this measure still requires finding additional evidence about the second attribute of nepotism, namely the misuse of the family connections. Interestingly, most studies take family ties as a measure of nepotism without acknowledging that evidence of the misuse of those ties is missing (e.g. Borrego 2017; Ragauskas and Valeškaitė 2020), but other studies capture first the family ties, and then do additional analysis on the performance of the individuals to assess whether those ties were used inappropriately, thus constituting nepotism (e.g. De la Croix and Goñi 2021; Riaño 2021).

One advantage of the family-ties measurement is that it allows for capturing the exact family relationship and thus, for instance, differentiate between consanguine and legal (as well as by the degree or closeness of the relationship). On the other hand, perhaps the main disadvantage of this measurement system is that it heavily depends on the availability of the data. Some sources, like archives or bibliographic references, require enormous amounts of work to systematize for large numbers of people. Other sources, such as administrative records, generally are not publicly available due to laws on access to personal information.

One source of family ties that deserves special mention is non-perception surveys, usually carried out by government agencies (and thus subject to the same restrictions as administrative records). Some studies rely on non-perception surveys that simply ask the question: Do you have relatives (father, mother, etc..) working in this institution? (e.g. Lentz and Laban 1989; Scoppa 2009; Singell and Thornton 1997). Notice that these surveys do not allow for learn-

ing who the connected person is, making it impossible to trace back family networks. However, empirical studies use these surveys to compare related vs non-related individuals based on direct evidence of an existing link. For instance, Scoppa (2009), based on a survey of 8,000 households, shows that if the father is a public employee, the probability of his child working in the same sector is increased by 44%, controlling for individual characteristics and labor market conditions.

Perception Surveys

The last strategy for measuring nepotism that we evaluate uses survey questions such as “Do you think hiring practices of the government are nonmeritocratic?” Or even more direct questions such as “What percentage of the people employed in this agency do you believe obtained their jobs due to favoritism by family relatives?” (see, for instance, US Gov 2016; Chassamboulli and Gomes 2019). Notice that this measure of nepotism aims to capture the two attributes of the concept, the family tie and its misuse, in a single question. However, an obvious concern with measurements based on surveys is that people’s perception may be biased to the extent that it could reflect other factors, such as differences in the social level of cynicism, the degree of identification with the government, or the perceived corruption or injustice of social or economic decisions made by the institution or organization that is being evaluated (Treisman 2007). Moreover, the quality of a measure of nepotism based on perception surveys also depends on a good strategy for selecting the sample, its size, the wording of the questions, and all the caveats associated with analyzing survey data. Of course, perhaps the main advantage of this method is that it is relatively easy to produce, given enough resources for hiring a competent firm or team to carry out the survey.

Validity, Reliability, and Replicability of the Measures

We evaluate the measurement strategies for nepotism in terms of validity, reliability, and replicability.⁴ When considering validity, matching-surnames and family-ties capture only one attribute of nepotism -the family tie. However, family-ties provide certainty of the relationship whereas matching-surnames does not. Perception surveys, capturing both attributes, is the most valid measure of nepotism.⁵ Reliability is relatively high for matching-surnames and family-ties (assuming data is available different researchers would produce

⁴ Remember that validity refers to the extent to which a measure corresponds to the concept that it is intended to capture. Reliability refers to the extent to which the measurement process repeatedly and consistently produces the same score for a given case. And replicability refers to the ability of third-party scholars to reproduce the process through which a measure is created.

⁵ We capture the relative positioning of the measures with undetermined, low, medium, and high scores in Table 1.

the same measure), while reliability for perception surveys is undetermined as it depends on sample representativeness and survey professionalism. In turn, perception surveys score low in replicability due to its sensitivity to changing contexts, whereas matching-surnames exhibit high replicability due to transparent methodology. Replicability for family-ties depends on the difficulty of obtaining specific data, making it challenging to determine in advance. Table 1 summarizes this discussion.

Table 1: Assessment of measurements

	Validity	Reliability	Replicability	Advantages/Disadvantages
Matching surnames	Low	High	High	Source (lists of names) relatively easy to obtain Easy to replicate Makes strong assumptions of the data distributions Captures only 1 st degree family relationships Sources very difficult to obtain
Family ties	Medium	High	Undetermined	Hard to replicate, requires access to data Captures nuances in kind and degree of family relationships Relatively easy to produce
Perception surveys	High	Undetermined	Low	Quality subject to sampling methodology Difficult to replicate

IV. MEASURING NEPOTISM

Methodological approach

When comparing different measures that aim at capturing the same underlying concept, it is expected that they will exhibit a certain degree of inter-measure correlations (Coppedge et al. 2011). To systematically compare the three nepotism measures—matching surnames, family ties, and a survey-based assessment—we aggregated data from various sources at the judicial circuit level in Mexico, considering similar time periods. This approach allows us to control for social, economic, and cultural identities because judicial circuits overlap with the territorial boundaries of Mexico’s thirty-two states.⁶

⁶ According to the UNDP (2015), most states located in the central and southern regions of Mexico exhibit levels of economic and educational development below the national average. However, it is interesting to note that the level of human development does not seem to be systematically related to the incidence of nepotism. This is because the variability in the three measures analyzed is considerable high both in judicial circuits with high human development indices and in those with lower indices (see Online Appendix D for more details).

In the following subsections we provide detailed descriptions of the construction process for each of the three nepotism measures, drawing upon various sources of information. We present our findings shedding light on the nuances and merits of each approach. Finally, to facilitate across-measures comparisons, we constructed a ranking list for each measure, where a score of 32 represents the highest nepotism level, and a score of 1 indicates the lowest nepotism level, as assessed by each respective measure (see Figure 4 for reference).

The Mexican Federal Judiciary. Institutional Context

The Mexican Federal Judiciary has been signaled for having a problem of patrimonialism and nepotism, due in part to the long period (1917-1994) during which judges' selection was done via patronage: Supreme Court Judges used to handpick judges for the district and circuit level courts (Pozas-Loyo and Ríos-Figueroa 2018). Since 1995 a Judicial Council manages judicial selection based on merit examinations, but recent analysis has shown that the number of family members working in the judiciary is still very high (Borrego 2017; Ríos-Figueroa 2018; Brassiolo et al. 2021).

The Judiciary has three layers: first instance trial courts (called district judge-ships or *juzgados*), second instance appellate courts (called circuit *tribunales*), and the supreme court. Geographically, the federal judiciary is organized in thirty-two circuits that host both layers of appellate courts (the *tribunales*), and in judicial districts within the circuits that host the trial courts (the *juzgados*). A judicial council, in charge of administering the human and material resources of the judiciary, and an electoral jurisdiction (with trial courts and one appellate court) are also part of the federal judiciary. According to the 2021 justice census,⁷ by the end of 2020 there were 271 collegiate appellate tribunals (composed of three magistrates each), 101 unitary appellate tribunals (composed of one magistrate each), and 446 district trial courts. In total, by the end of 2020, the Mexican Federal Judiciary employed 50,999 persons out of which 1,443 were judges at district and circuit courts.

Matching surnames

We collected a comprehensive list of judicial officials' surnames in 2018 and 2019.⁸ Specifically, the data include individuals, from all levels in the hierarchy,⁹ working at trial and appellate courts and other judicial organs across 32 judicial circuits.¹⁰ It includes information such as paternal and maternal surnames,

⁷ The justice census is available at <https://www.inegi.org.mx/programas/cnijf/2021/>

⁸ The data comes from <https://www.plataformadetransparencia.org.mx/>

⁹ At the top level are Judges and Magistrates, in the lowest level are desk-clerks.

¹⁰ Please note that we have deliberately excluded other categories of Mexican judiciary employees, such as those employed by the Supreme Court, Federal Judicial Council, or specialized federal courts like the electoral court. Our purpose in doing so is to maintain a sharp focus solely on jurisdictional bodies for the purposes of this exercise.

state, circuit, position, and specific office in which each individual works.¹¹ The complete dataset captures information on 35,748 individuals, out of which 13,974 work across 292 appellate circuit tribunals,¹² 12,889 across 351 district courts.¹³

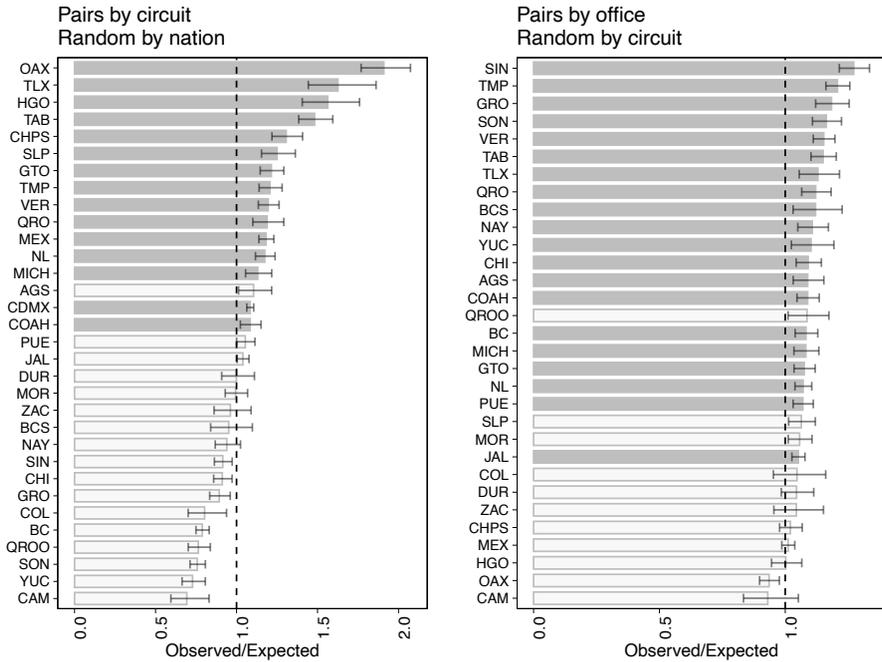
We follow Grilli and Allesina's (2017) methodology, counting the number of shared surnames' pairs observed and contrasting it to the number of pairs expected at random. Additionally, we propose a matching algorithm suitable for the Spanish naming convention in which the second surname (the mother's surname) is included and provides additional information to identify family ties between individuals. We consider a *connection* as an event in which two employees that work in the same judicial circuit share the same surname. We calculate this measurement at two levels: 1) entire judicial circuits and 2) specific workplaces within the circuit such as judicial organs, administrative offices, courts, and tribunals. Also, we calculate two benchmarks to compare each measurement: we randomize 10^6 times a sample from the whole dataset (*random by nation*), with no repetition, and randomize 10^6 times a sample from each circuit (*random by circuit*), with no repetition. The randomization at the national level resamples public officers' surnames from the whole dataset. In contrast, randomization at the circuit level shuffles from the list of public officers' surnames for each circuit. The randomly expected number of repeated surnames is of course different depending on whether we take the whole nation or a single circuit as a basis for generating the benchmark (see Figure 1).

¹¹ Unfortunately, we do not have information disaggregated at the office level for the first circuit (7,649 employees).

¹² Including Collegiate Circuit Courts, Unitary Circuit Courts and Plenary Circuits.

¹³ Including District Courts, District Courts of Auxiliary Centres, District Courts of the Auxiliary Centre with Processing of Matters (Hybrids), District Courts Specialized in Execution of Penalties (within the Criminal Justice Centres), and District Courts with competences in Ordinary, Auxiliary and Penal Enforcement matters.

Figure 1. Two measures of Nepotism using Matching surnames



The left-hand panel in Figure 1 shows that 18 out of 32 jurisdictions have an index of nepotism where the number of observed surname connections are higher than the expected number at random, and 15 of them test significant (solid bars). The concentration of surname pairs in these circuits is higher than the expected at random numbers with a p-value of 0.1, indicating a high likelihood of family connections. Notice that the benchmark in the left-hand panel is the expected number of shared surnames when randomizing a sample taken from the whole dataset multiple times (by nation). One potential shortcoming of the diagnosis in the left-hand panel of Figure 1 is that circuits, which largely coincide with Mexican states, concentrate similar surnames (maybe for geographic and/or historic reasons) so that naturally they display a higher number of shared surnames when compared to those expected at random within the entire dataset, but that do not necessarily capture family relations.¹⁴

The right-hand panel of Figure 1 shows, in contrast, that 29 out of 31 jurisdictions have an index of nepotism where the number of surname connections observed is higher than expected at random, and 20 of them test significant (solid bars). In this case, we compare the count of surname pairs within workplaces against a benchmark based on randomizing names not from the entire

¹⁴ Notice that when counting surname connections within judicial circuits and randomizing at the circuit level the expected number of shared surnames should be equal to the number observed. We tested this and, in fact, the numbers were very close (see Online Appendix A).

dataset (by nation) but from a subset of it (by circuit, the circuit in which those workplaces are located). Notice the different interpretation that one can derive from these results: counting connections within offices and comparing them at random with a smaller subset of the data (by circuit) eliminates regional concentrations of surnames as a potential confounder of family connections and thus reflects the occurrence of familism more accurately. We say “familism” and not “nepotism” because to probe the latter, additional evidence of the misuse of family connections would still be required.

For our purposes in this article, it is vital to underscore the importance of the base that one chooses for creating a benchmark against which the total number of shared surnames is compared.¹⁵ For instance, in the left-hand panel of Figure 1, OAX (Oaxaca Circuit) ranks at the top of the list of familism, whereas in the right-hand panel of the same Figure 1, OAX is at the bottom of the list. Of course, the top position of Oaxaca in the left panel might be explained by a large concentration of homonyms in that state in comparison with the rest of the country. Or it could also be the case that, in fact, the numbers of family relatives working in the federal judiciary in Oaxaca is quite high. One cannot tell from this measurement alone. However, the fact that in the right-hand panel of Figure 1 Oaxaca appears at the bottom of the table might indicate that the former interpretation is more likely (because the levels of homonymity in the offices are not that high when compared with a benchmark produced by randomizing a sample of names from the same circuit). We would be more comfortable saying that circuits like Tabasco (TAB) or Tlaxcala (TLX) are places with higher numbers of relatives in the judiciary than Oaxaca (OAX), because of the proximity of both measures (left and right-hand panels) in those circuits.

Family ties

For our empirical assessment on family ties, we use data collected from administrative records by a former member of the Judicial Council, Felipe Borrego and his team of collaborators, during the years 2015 and 2016. It is a unique dataset in which the observations are relationships between two individuals who were working in the federal judiciary at that time. Each row contains information regarding the exact workplace and the position of the first individual, called “the worker”, and the same information on the second individual, called “the relative.” In addition, the dataset records the specific type of family connection between the two individuals (e.g. brother, sister, son, father, spouse, cousin, etcetera). The total number of observations in the dataset is $N=6,284$ (1107 if we restrict the observations to those in which “the worker” is a judge).

¹⁵ Another interesting finding in Figure 1, worth pursuing in subsequent research, is that some judicial circuits’ score is below 1, which means that the number of surname pairs observed is lower than that expected at random. What this means is not clear. It may simply represent a paucity of matching surnames. But it might also be an indication of an interesting underlying phenomenon such as “reverse nepotism”, a strong local culture against familism.

Notice that each relationship contains two persons, the “worker” and the “relative.” Because some persons appear twice in the same relationship (once as a “worker” and once as a “relative”) when the unit of analysis is a *relationship* we exclude those duplicates, and the number of observations is $N=4,731$.¹⁶

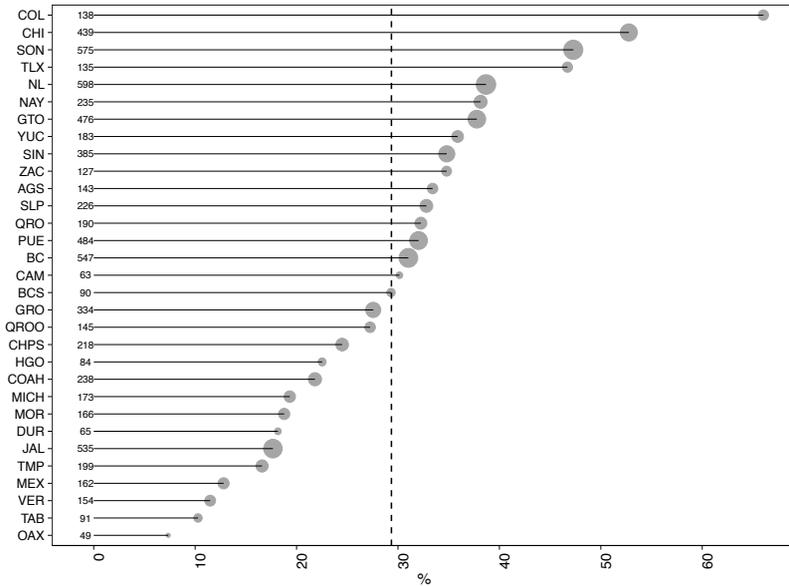
What is the extent of family ties in the Mexican Federal Judiciary? Figure 2 gives a sense of the magnitude of the phenomenon (see Figure 2). It shows that on average 29% of judicial officials (including judges at different levels, but also clerks and other administrative workers) have at least one relative working in the same circuit.¹⁷ The range, however, is considerable: There are circuits such as Colima (COL) where up to 80% of their employees have at least one relative working in the same circuit, and at the other extreme we find Oaxaca (OAX) where 7% of judicial employees have at least one family member in the same circuit.¹⁸ Notice that Figure 2 reports absolute and relative number of relatives (small number at the beginning of each horizontal bar, and size of the circle at the end of each bar). In absolute numbers, four circuits (Nuevo León NL, Jalisco JAL, Baja California BC, and Sonora SON) have more than 500 officials with at least one relative in the circuit, but only Sonora (SON) and Nuevo León (NL) occupy top positions in the figures. The number of family members that each official has also exhibits a considerable range that goes from 1 to seventeen (the average is 3 family members per official).

¹⁶ The dataset has some limitations: three of them are noteworthy. First, it does not systematically record all the possible family ties between the individuals. For instance, suppose there is an entry specifying that person A is the brother of person B, and another entry specifying that person A is also the brother of person C; then it is possible that there is NOT another entry specifying that person B is the brother of person C. Second, the information was collected by circuit, thus there is no systematic information of family ties of persons who work in different circuits. Third, the database does not contain information about the first circuit (Mexico City), the largest and most important in the country, and it contains partial information about the second circuit (State of Mexico), the second largest and most important (the database does not contain information about the parts of the State of Mexico that are part of the metropolitan area of Mexico City). The database also does not contain information about people working at the Supreme Court (out of about a thousand persons who work at the suprema court, eleven of them are the justices). In sum, though the dataset is highly valuable, it is also incomplete in important ways, so the real extent of family ties in the judiciary is no doubt higher.

¹⁷ Is this number high or low? A survey made across executive agencies in the United States in 2015 shows that in the Department of Justice people believe that 15% of officials have a family member also working at the Department (US Gov 2016: 27). In the Spanish *Tribunal de Cuentas* an investigation by the newspaper *El País* revealed that 14% of their employees have at least one family member working there (Hernández 2014).

¹⁸ These numbers for Oaxaca (OAX) reinforce the point made earlier that the matching surnames approach, when compared with the benchmark based on the national dataset, very likely overestimates the number of family relationships in that circuit.

Figure 2. Judges and judiciary officials with at least one relative, per circuit



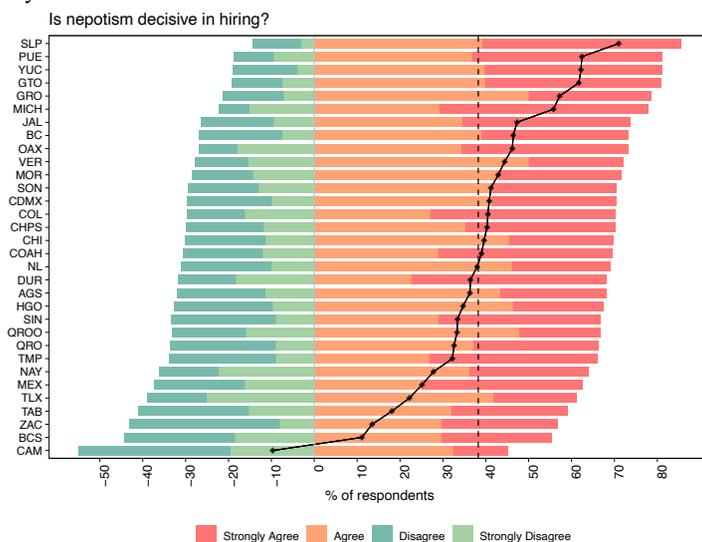
One advantage of the measuring of family ties is that one can analyze the specific type, and degree, of family relationships in an organization. From this perspective, online Appendix B displays three scenarios of kinship. Taking each relationship as the unit of analysis (N=4,731), Appendix B shows that 68% are consanguineous relationships and 32% are affinity relationships. Out of the consanguineous relationships, 49% are second degree (brothers/sisters, and grandparents/grandchildren), 34% are first degree (parents/children), and 18% are third degree (uncle-aunt/nephew-niece). Out of the affinity relationships, 65% are first degree (married couples), and 21% are third degree (brother/sister-in-law). Appendix B takes the absolute number of relationships per circuit, and Nuevo León (NL) occupies by far the top position in both types of relationships, but interestingly Jalisco (JAL) exhibits considerably more consanguineous than affinity relationships, and Chiapas (CHPS) somewhat more affinity than consanguineous relationships.

Perception Surveys

The *World Justice Project* (WJP) included in their survey to measure the rule of law in Mexico, a question that allows us to assess nepotism in the Mexican Federal Judiciary. Specifically, the WJP created a list of 12,500 lawyers in all fields (civil, criminal, administrative, etcetera) across the country from registries in phone books, web searches, individual references, and organizations' records. The WJP contacted them and invited them to participate in a survey of experts regarding the workings of the justice system in Mexico. The online survey was

submitted and collected from October 2017 to April 2018. A total of 483 surveys were responded in full (see World Justice Project 2018). The survey included the question: “Do you agree/somewhat agree/somewhat disagree/not agree with the statement: “Having relatives in the federal judiciary is the key factor in decisions for hiring and for promotion.” Notice that this question contains both attributes of nepotism, which produces a valid measurement of the concept. According to this measurement, an average of 39% of responders agreed or somewhat agreed with the statement, but in some judicial circuits this number goes above 80% (see Figure 3).

Figure 3. Relatives in the judiciary are key for hiring and promotions within the judiciary



V. CONCLUSION: WHAT WOULD BE THE BEST MEASURE OF NEPOTISM?

The best measure of nepotism would be one that is built from a clear definition of the concept and that captures it as closely as possible to the theory in which the concept is embedded. We have provided a clear definition of nepotism (the preferential treatment based on family connections and not on merit for the concession of public or private jobs, contracts, or positions), unpacking it into two components, a family tie and its misuse. We showed that the type of data available to empirically assess nepotism, and the methodology employed to generate a specific measure, imply trade-offs regarding the validity, reliability, and replicability of the measure. We believe that the tools offered in this paper can be useful for selecting the best measure nepotism given the theory, data availability, and conditions of a specific research project.

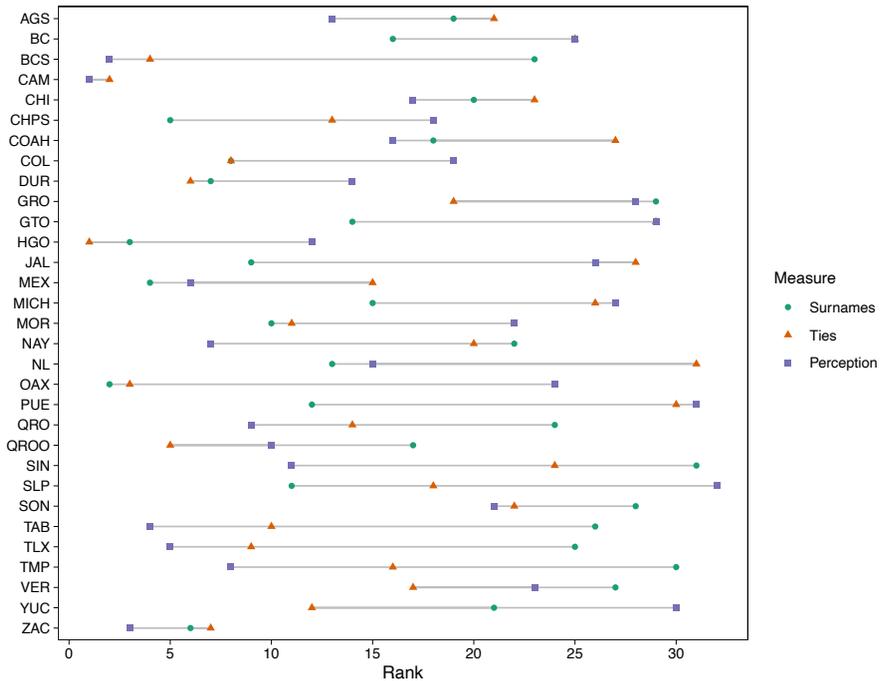
The analysis of the Mexican Judiciary illustrates the trade-offs in selecting a measurement strategy. The most valid measure, the one that captures both attributes of the concept of nepotism, is the one based on perception surveys. However, perception surveys might capture more than what the specific question is asking and they are highly dependent on the specifics of sample selection, question wording and so on, so that measures based on them would suffer in terms of reliability and replicability. The judicial circuit of Oaxaca (OAX) is a case in point, since in the perception surveys a relatively large number (72%) of respondents consider that nepotism is a key factor for entering the judiciary in that circuit, whereas in the matching-surnames and family-ties measures Oaxaca scores much lower on nepotism (these measures are less valid, but more reliable and replicable than the perception measures). Oaxaca, we must note, is a southern state in Mexico where many social indicators are lagging and perhaps this general perception also affects the perception of nepotism in the judiciary.¹⁹

Oaxaca's judicial circuit (OAX) also shows that the matching-surnames measure, that is reliable and replicable, is sensitive to the benchmark chosen to evaluate whether the observed number of repeated surnames is high or low (see Figure 1). Arguably, using the country as a benchmark is more appropriate for Oaxaca given the peculiarities of the state, and Oaxaca scores low on nepotism by this measure. But of course, there is not an a priori correct level for selecting the benchmark. The family-ties measure avoids some of the previous shortcomings, and with it Oaxaca scores also considerably low in nepotism (see Figure 2). However, both measures have validity concerns since they only capture one attribute of nepotism, the family connection, an additional assessment of whether that connection is misused needs to be carried out. Again, our point is that there are validity, replicability, and reliability trade-offs in the measurement strategies and that the appropriateness of each measure very much depends on the concept of nepotism, the theory in which it is embedded, and the type of data available to capture it empirically. For a general comparison, Figure 4 displays the three measures of nepotism across all Mexican judicial circuits.²⁰

¹⁹ See Online Appendix D for a Table of Mexican States according to Human Development Index and the three measures of nepotism.

²⁰ See the Online Appendix C for a correlation matrix of all measures.

Figure 4. Three Measures of Nepotism in the Mexican Federal Judiciary



Favoritism in recruitment and promotion in public sector employment undermines the merit-based systems that are foundational for effective, efficient, and legitimate public administration (e.g. Brans and Hondeghem 1999; Carpenter 2001; Grindle 2012). The literature on patronage has focused on the study of political-based public hiring (e.g. Panizza 2018; Toral 2019; Brierley 2021), the family-based patronizing employment has been receiving increasing scholarly attention. Despite the insights and contributions of recent analysis on causes or effects of nepotism, caution over the conclusions of some studies remain given the gap between the acknowledgement of the two attributes of the concept of nepotism and the measurement of only one of them. Therefore, to explore what are the effects of nepotism on institutional performance, or what causes the variation across organizations regarding the number of relatives employed due to favoritism, it is key to first produce a good diagnosis. Building on existing scholarship, we have provided conceptual and methodological tools to correctly identify and measure family ties and nepotism in an organization, a key first step to then devise policies to address its causes or its effects.

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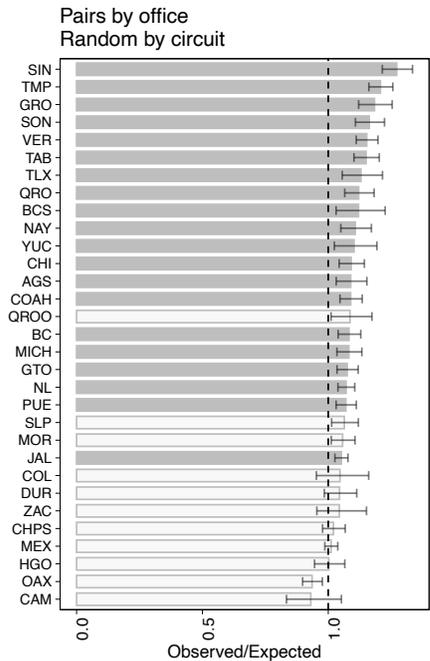
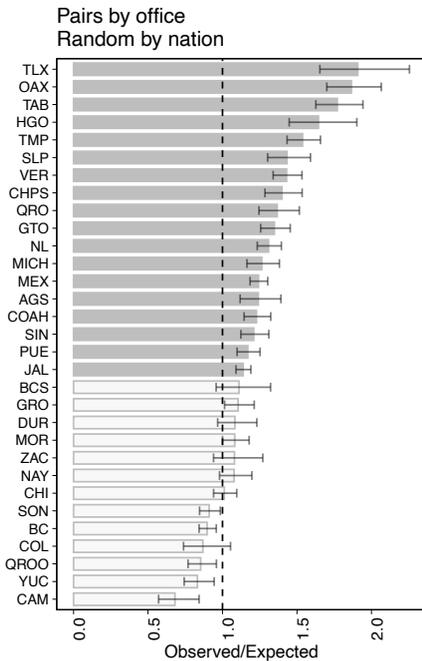
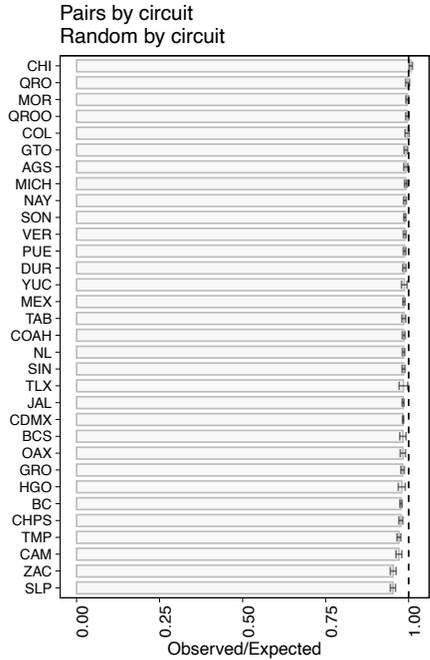
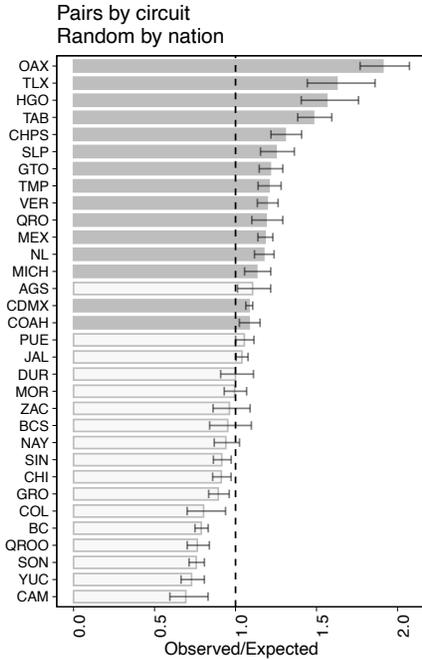
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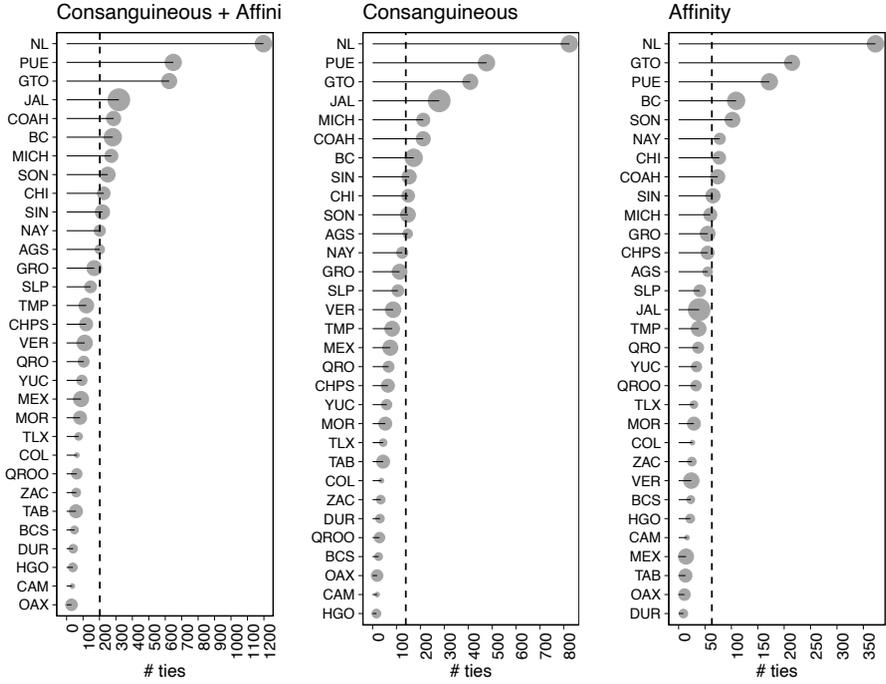
APPENDIX A

Counting pairs of surnames and random settings



APPENDIX B

Consanguineous and affinity ties by circuit



APPENDIX C

Correlation matrix between variables

	Matching Surnames*				Family ties (directly)**					Perception***				
	m1	m2	m3	m4	r.consang	r.affin	r.con_aff	r.judges	r.officer	r.jud_off	r.A	r.SA	r.A_SA	r.balance
m1	1	-0.13	0.57	-0.1	-0.03	-0.19	-0.08	0.29	-0.4	-0.39	-0.01	0.06	-0.02	-0.02
		0.45	0	0.58	0.88	0.3	0.67	0.12	0.03	0.03	0.97	0.73	0.91	0.92
m2		1	-0.34	0.23	0.22	0.18	0.21	-0.05	0.23	0.23	0.21	0.02	0.13	0.13
			0.06	0.21	0.22	0.32	0.26	0.79	0.21	0.21	0.25	0.9	0.48	0.49
m3			1	-0.12	-0.33	-0.35	-0.35	0.12	-0.34	-0.33	0.17	-0.2	-0.08	-0.08
				0.51	0.07	0.05	0.06	0.52	0.06	0.07	0.35	0.28	0.66	0.65
m4				1	0.31	0.34	0.31	-0.17	0.21	0.21	0.19	-0.12	-0.06	-0.06
					0.09	0.06	0.09	0.37	0.26	0.27	0.3	0.53	0.74	0.76
r.consang					1	0.86	0.99	0.27	0.25	0.25	0.11	0.35	0.49	0.5
						0	0	0.14	0.17	0.17	0.54	0.06	0	0
r.affin						1	0.92	0.15	0.53	0.54	0.27	0.19	0.43	0.44
							0	0.42	0	0	0.14	0.3	0.02	0.01

	Matching Surnames*				Family ties (directly)**					Perception***				
	m1	m2	m3	m4	r.consang	r.affin	r.con_aff	r.judges	r.officer	r.jud_off	r.A	r.SA	r.A_SA	r.balance
r.con_aff					1			0.27	0.31	0.32	0.16	0.32	0.5	0.51
								0.14	0.09	0.08	0.38	0.08	0	0
r.judges								1	0.02	0.03	0.19	-0.05	0.08	0.07
									0.91	0.87	0.3	0.8	0.68	0.7
r.officer									1	1	0.25	-0.1	0.01	0.02
										0	0.18	0.59	0.94	0.93
r.jud_off										1	0.25	-0.1	0.02	0.02
											0.17	0.58	0.93	0.91
r.A											1	-0.55	0.3	0.29
												0	0.09	0.1
r.SA												1	0.57	0.58
													0	0
r.A_SA													1	1
														0
r.balance														1

Bigger numbers = coefficients; Smallest number = p-values; Bold = significant at 90%; red = p-value < 0.1

*Matching surnames: m1 = Random by nation, counting surnames by circuit

m2 = Random by circuit, counting surnames by circuit

m3 = Random by nation, counting surnames by office

m4 = Random by circuit, counting surnames by office

**Family ties: r.consang =: only consanguine

r.affin = only affinity

r.con_aff = consanguine + affinity

r.judges = % of judges with at least one relative

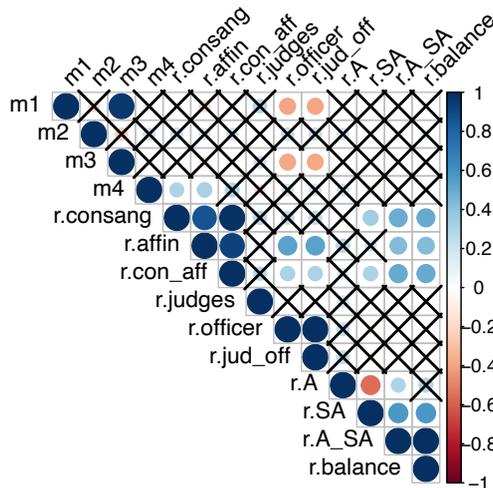
r.officer = % of judicial officers with at least one relative

***Perception: r.A = % of Agree nepotism is key to get hired or promoted

r.SA = % of Strongly Agree nepotism is key to get hired or promoted

r.A_SA = % of Agree + Strongly Agree nepotism is key to get hired or promoted

r.balance = % of (Agree + Strongly Agree) – (Disagree + Strongly Disagree) nepotism is key to get hired or promoted



APPENDIX D

Human Development Index by state/judicial circuit and Measures of nepotism

