Perverse Complimentarity: Political Connections and the Use of Courts among Private Firms in China

Yuen Yuen Ang
University of Michigan

Nan Jian
University of Southern California
About the Center on Democracy, Development and the Rule of Law (CDDRL)

CDDRL was founded by a generous grant from the Bill and Flora Hewlett Foundation in October in 2002 as part of the Stanford Institute for International Studies at Stanford University. The Center supports analytic studies, policy relevant research, training and outreach activities to assist developing countries in the design and implementation of policies to foster growth, democracy, and the rule of law.
ABSTRACT

We examine whether and how political connections influence the use of courts in transitional and authoritarian settings using survey data of over 3,900 private firms in China. Although political connections are normally associated with “using the back door,” we find that politically connected firms are more inclined than unconnected firms to use courts over informal means of dispute resolution. Our finding raises a more challenging question: Are politically connected firms more likely to litigate because of their advantages in “know-how” (knowledge of navigating courts) or “know-who” (political influence over adjudication)? By manipulating regional institutional variance as moderators, we find evidence that political advantage dominates knowledge advantage in linking political connections to the use of courts, implying a relationship of perverse complementarity. This finding suggests that expansion of formal institutions may not necessarily erode informal networks; it is the latter that emboldens market actors to seize the advantage of the legal system.
The influence of informal institutions on the development of formal legal institutions is a central concern in political economy (North 1990, 1991). Canonical institutional theories posit a substitutive relationship between formal laws and informal networks. In early Western Europe, private ordering initially compensated for deficiencies in the formal system; however, the rise of formal institutions, particularly third-party enforcement via courts, eventually replaced the earlier substitutes, paving the way for modern market economies (Greif 1989, 2006; North 1991; Stiglitz 2000). Thus, to many, the juxtaposition of informal networks against formal law is universally intuitive, even in contemporary China. As Potter noted, “[t]he closely held notion that formal and legal institutions operate in contradistinction to the rule of guanxi [personal connections] means that anyone who attempts to relate the two runs the risk of professional beheading” (2002, 180). Indeed, several prominent sociologists have predicted the “declining significance of guanxi” and political connections in business (Guthrie 1998, 2002; Wank 2002) as Chinese society modernizes and expanding market mechanisms erode the traditional base of power among Communist officials (Nee 1989).

Others, however, disagree. Informal institutions do not necessarily substitute for formal institutions; the former may complement or accommodate, depending on the strength of the latter (Helmke and Levitsky 2004). Moreover, the form and effectiveness of formal institutions cannot be assumed in transitional and developing economies, where formal institutions are still being constructed and shaped by pre-existing norms and networks (Grzymala-Busse 2010; Tsai 2006). Some maintain that guanxi, particularly personal connections to political authorities, remain indispensable in China for a variety of endeavors, including operating businesses (Kennedy 2005; Li and Zhang 2007; Pearson 1997), obtaining bank loans (Li et al. 2008), expressing civic grievances (Michelson 2006, 2007b; Michelson and Read 2011; Tsai and Xu 2012), and avoiding bureaucratic harassment (Michelson 2007a). These findings echo Walder’s influential
claim about the persistent value and returns to political office in China’s transitional economy (Walder 2002).

We revisit the debate surrounding formal institutions and informal networks through the lens of whether and how political connections influence the use of courts for dispute resolution among private firms in China. In recent years, Chinese firms have become increasingly willing to use courts to resolve disputes (Clarke, Murrel, and Whiting 2008; Dickson 2008; Whiting 2010). However, with only a few exceptions in Russia (Frye 2006; Hendley, Murrell, and Ryterman 2000), little remains known about the characteristics of firms that employ formal over informal modes of dispute resolution in transitional and authoritarian countries. This is particularly worthy of investigation among China’s private firms, which are traditionally dependent upon personal ties with bureaucratic patrons for economic survival (Tsai 2007; Wank 1996).

By employing survey data for over 3,900 private firms sampled nationwide, our paper addresses two questions. First, are politically connected firms more or less inclined than unconnected firms to use courts when facing disputes? Appropriate to the context of China, we define politically connected entrepreneurs as those who are (a) congressional delegates or (b) former party-state officials. We find that, all things being equal, politically connected firms are more likely than others to use courts over informal means of dispute resolution. Put colloquially, although political connections are normally associated with the exploitation of “back door” strategies, we find that connections may paradoxically empower market actors to “use the front door.”

Our primary finding motivates a critical and more challenging question that remains unresolved in the existing literature: Are politically connected firms more likely to litigate because of their advantages in “know-how” (knowledge of navigating the courts) or “know who”
(political influence over adjudication)?\(^1\) Although those familiar with the political embeddedness of Chinese courts may not be surprised by our main finding, the divergent mechanisms by which connections induce firms to use courts remain untested. To some, political connections instinctively evoke images of unscrupulous individuals who pull strings behind the scenes. Others, however, contend that “political connections are not always corruption” (Tsai 2011). Politically connected actors are also more likely to possess experience and confidence in maneuvering complex bureaucratic and legal institutions. Political connections can provide a positive resource for civic and legal participation, both in democracies and non-democracies (Boone 2003; Fung 2010; Krishna 2002; Tsai and Xu 2012). Both positive and perverse mechanisms are likely to link political connections to legal utilization. The empirical challenges we address is disentangling the two mechanisms and assessing their relative weights.

It is difficult, if not altogether impractical, to ask politically connected firms directly for their primary motives in using courts, particularly in large-n surveys. To circumvent data restrictions, we apply simple inferential logic: if politically connected firms use courts primarily to exploit “know who” (political advantage) over “know how” (knowledge advantage), then we should predict variance in correlational patterns between political connections and the use of courts as the operating environment varies. To employ an analogy, we can infer the dominant mechanism of friendship between two individuals (e.g., money versus loyalty) by observing how their bond manifests across different environments. Specifically, in our regression analyses, we employ interaction effects with regional legal services capacity as a moderator and then simulate the effects graphically. Our analytical strategy yields evidence suggesting that political advantage dominates knowledge advantage. In short, we report a relationship of perverse complementarity: we find not only that political connections and the use of courts go hand-in-

\(^1\) The phrases “know who” and “know how” were earlier developed by Michelson (2006) to distinguish between political advantages and knowledge advantages.
hand but also that the primary mechanism linking them is “know who” over “know how.” Whereas others have asserted that political connections can facilitate legal systems, obstruct legal systems, or do both, we present the first empirical attempt to adjudicate these claims.

On a broader level, we highlight core differences in interactive patterns between formal and informal institutions in early Western Europe, on which canonical theories are based, and contemporary developing and transitional countries such as China. Studying patterns of legal development in early Western Europe, many economic historians find formal laws and informal networks substitutive. However, this observation is not universal. Among developing countries today, the development of law is tightly compressed, and where authoritarian parties rule, law is subordinated to politics. Thus, our findings suggest that the expansion of formal legal institutions does not necessarily erode informal networks; the latter can embolden market actors to seize advantage of the legal system.

We will proceed as follows. We present the background of China’s legal development and then discuss whether and how political connections influence the use of courts among private firms, specifying observable implications for testing. Following this discussion, in Section III, we describe our data, variables, and statistical methods. Section IV reports the results of our regression analyses and simulation. Following up on our findings in Section IV, the next section speculates on why politically connected firms might exercise greater advantage in courts than in informal forums. Finally, in Section VI, we conclude with comparative implications and directions for future data collection. To abbreviate, in the rest of the paper, we will refer to political connected firms as PC firms and non-connected firms as non-PC firms.

**POLITICAL CONNECTIONS AND USE OF COURTS**

China’s legal system has undergone tremendous growth and reform in the last thirty years. The Economic Contract Law was first promulgated in 1981, with a new version passed in 1999.
From 1983 to 2001, economic disputes grew 18.3% each year on average, twice the rate of civil disputes and four times that of criminal cases (Clarke, Murrel, and Whiting 2008). Contract-related disputes took the lion’s share of economic disputes during this period (Lubman 1999, 254-5). Sales contract, land leasing, and money lending were major areas of disputes (Peerenboom and He 2008).

In addition to litigation, there are alternative informal mechanisms of dispute resolution in China, such as self-enforcing contracts, negotiation and mediation, and arbitration (Whiting 2010). Another option is to seek intervention from local or higher level governmental authorities (Michelson and Read 2011, 12-13). Existing studies report that private mediation remains the most popular mechanism (Tang 2009; Whiting 2010). However, the legal system is an increasingly important avenue for resolving corporate disputes (Clarke, Murrel, and Whiting 2008; Whiting 2010). Consistent with others, we find a steady rise in the use of courts in our sample, even though mediation is still the most frequently employed method.

**Main Test: Are PC Firms More Inclined to Use Courts?**

We review two divergent hypotheses regarding how political connections relate to legal utilization. Following the substitutive view, political connections and the use of courts are expected to be negatively correlated. As Stiglitz asserted, “network[s] of interpersonal relationships get dispensed with and destroyed” with the emergence of formal market institutions such as courts (2000, 64, italics added). Likewise, in the policy world, international assistance projects typically assume that expanding the use of law equates to leveling the playing field between individuals with and without connections (Jensen 2003).²

However, the reverse, that political connections are positively associated with the use of courts, could be true if one takes into account the developmental and political context in China.

² This view has been criticized as “naïve legalism” (Michelson 2007a, 355; Suchman & Edelman 1996).
citizens and entrepreneurs. As observed in Russia, despite the government’s supply of laws and courts, firms shied away from using the legal avenue because they lacked knowledge and trust (Hendley 1999). Furthermore, in an authoritarian system, courts are not politically independent (Ginsburg and Moustafa 2008). Thus, compared to ordinary firms, we can expect that PC firms, whose owners formerly served as officials or congressional delegates, may be more empowered to use formal institutions. Indeed, a number of studies in China focusing on citizens (but not firms) find that former cadres are more likely than ordinary citizens to employ litigation, petitions, and even protests to resolve civic grievances (Li and O'Brien 2008; Michelson 2006; Michelson and Read 2011; O'Brien and Li 2006).

**Hypothesis 1 (a) – Political connections and use of courts are substitutive:** PC firms are less likely to use courts over informal means of dispute resolution than non-PC firms.

**Hypothesis 1 (b) – Political connections and use of courts are complementary:** PC firms are more likely to use courts over informal means of dispute resolution than non-PC firms.

**Which is the Dominant Mechanism: Political Advantage or Knowledge Advantage?**

The complementary view, which predicts a positive correlation between political connections and the use of courts, motivates a challenging empirical question: In what ways do political connections empower firms to use courts more than those lacking connections? Is it because political connections endow “know-who” (political advantage) or “know how” (knowledge advantage)? Although there could be several pathways through which political connections are positively linked to the use of courts, “know who” and “know how” are the two most intuitive and widely discussed mechanisms in the literature. Below, we discuss each mechanism.
First, we discuss political advantage. PC firms may turn to courts primarily because they are (or believe they are) more effective at influencing courts for their personal advantage. By design, Chinese courts are subordinated to party and state authorities (Lubman 1999; Michelson 2006; Potter 2001). Judges and court personnel in China are appointed by the party’s organization department and financed by local governments (Clarke, Murrel, and Whiting 2008). Political intervention of judicial processes “continues to be a legitimate action” despite top-down efforts at professionalizing courts (Liebman 2007, 626). In this environment, having political connections provides an entrepreneur privileged access to court personnel and supervisory officials. A recent study on commercial disputes suggests the prevalence of political influence. Although the majority of respondents refused to answer questions during interviews relating to influence, those who did revealed attempts to “[invite judges] to banquets, [call] judges in their homes, and [send] emissaries to meet with the judges” (Pei et al. 2010, 225).

Second, we discuss knowledge advantage. Political connections may empower firms to seek legal recourse for a positive reason: they possess more knowledge about how to use courts. In regard to litigation, users have to learn the legal system before they can approach it. Entrepreneurs who formerly served as officials or delegate members (our measures of PC) have exceptionally direct exposure to laws and policy making compared to ordinary firms. To quote Michelson, “political connections are more than influence-peddling and shady backdoor dealings… It is [also] about advantages in learning how to navigate new and complex institutions” (2006, 27). Connections can enhance “understanding of and adherence to legal rules and procedures; awareness of legal rights, information about legal processes” (ibid). More generally, some political scientists have argued that political connections can function as a form of social capital that empowers civic participation. For example, Fung argued that “empowered participation” was made possible by new initiatives that gave underclass communities in Chicago more direct access to city agencies and powerful political actors (Fung 2010). Likewise, drawing
on the survey results of Chinese residents, Tsai and Xu (2012, 8) concluded that “political insiders are more likely to have more resources for participation and find it easier to overcome barriers to political action in nondemocratic and transitional contexts.”

So how can we disentangle the two mechanisms – political advantage vs. knowledge advantage – and test which is more influential? Answering this question is the central task and contribution of our analysis. Our data, as well as other survey sources of which we are aware, do not reveal whether firms sought to influence judges when they used courts. Nor did the survey we use directly measure the firms’ legal knowledge or consciousness. Thus, our analytical strategy is to work with the existing data and analyze the moderating effect of the local institutional environment in which firms operate. We label this Legal Services Capacity (LSC). We measure LSC as the availability of legal professionals and the efficiency of courts in processing cases by province (more details in the data section). Our logic is that in areas with more technically efficient courts and where professional legal services are more widely available, non-PC firms can more easily navigate the legal system and learn to use courts. In other words, a higher level of legal services capacity approximates a smaller “knowledge gap” between PC and non-PC firms.

With this inferential logic in mind, we test the two competing mechanisms as follows. If PC firms use courts more than non-PC firms primarily because of their knowledge advantage over non-PC firms, then we should observe a weaker positive correlation between political connections and the use of courts in areas of higher Legal Services Capacity, i.e., where the “knowledge gap” is smaller (expressed in H2a). For example, Shanghai has more legal professionals and more technically efficient courts than Guizhou, such that non-PC firms in Shanghai, compared to those in Guizhou, can more easily compensate for knowledge

---

3 Indeed, a study in Japan attributed increased litigation rates from the mid-1980s onward to a larger number of lawyers and institutional reforms that rendered courts more accessible to regular citizens (parallel to more technically efficient courts in the Chinese context) (Ginsburg & Hoetker 2006).
disadvantage by hiring lawyers or even initiating or defending lawsuits themselves. If the knowledge factor dominates and political advantages are less significant, then we should see a lower propensity for PC firms to use courts over non-PC firms in Shanghai than in Guizhou; i.e., the positive correlation between PC and litigation should weaken.

Conversely, if PC firms use courts more because they can exercise influence and less because of knowledge differences, then a smaller “knowledge gap” should not diminish their propensity to use courts. In fact, wider availability of professional services and efficient courts should make it easier for PC firms to employ legal procedures. In this case, expressed in H2b, we expect to see a stronger positive correlation between political connections and the use of courts. Figure 1 summarizes our hypotheses and testing strategy.

**Hypothesis 2(a) – knowledge advantage dominates political advantage:** Where legal services capacity is higher (i.e., knowledge gap is smaller), the positive association between PC and the use of courts is weaker.

**Hypothesis 2(b) – political advantage dominates knowledge advantage:** Where legal services capacity is higher (i.e., knowledge gap is smaller), the positive association between PC and the use of courts is stronger.

**Figure 1: Hypotheses and Testing Strategy**

- **H3:** Where firms make more donations (i.e., the influence gap is smaller), the positive association between PC and the use of courts is weaker. (Presented in SI)
- **H2(b):** Where legal services capacity is higher (i.e., the knowledge gap is smaller), the positive association between PC and the use of courts is stronger.
- **H2(a):** Where legal services capacity is higher (i.e., the knowledge gap is smaller), the positive association between PC and the use of courts is weaker.
To be clear, our objective is to exploit the predicted moderating patterns in H2(a) and H2(b) to draw inferences about the dominant mechanism linking political connections to the use of courts. Our testing strategy makes no assumption that Legal Services Capacity causes firms to exercise political advantage over knowledge advantage or vice versa. Nor do we assume any causal direction between political connections and LSC. We realize that the two are likely correlated. However, in the absence of an experimental set-up, identifying such a causal link is not impossible, and more importantly, not the goal of our analysis.

DATA AND METHODS

Data Source

We use survey data on Chinese privately owned firms collected by the Privately-Owned Enterprises Research Project Team in 1995, 1997 and 2000. The surveys are part of an ongoing national project to collect information of the Chinese private sector to facilitate policymaking. The research team generated a nationwide random sample of private firms using multi-stage stratified sampling across administrative regions and industries and conducted direct interviews using a questionnaire with the major owner of each POE in the sample. The survey questions aimed to collect information on various aspects of the firms’ business operations for policy research. They covered a wide range of question on firms’ performance, as well as owners’

---

4 The survey is also available in the years of 2002, 2004 and 2006. Unfortunately, the questionnaire structure was changed considerably in each of these years, such that these three years of data are definitely not comparable with one another and not comparable with the years we used. It would be erroneous to pool data from all of these years only to expand and update the dataset. Although our dataset captures an earlier time period (up to 2000), by delimiting our scope of data to comparable years, we can be more confident of delivering robust results to inform future data collection efforts.

5 The project was funded jointly by governmental federations and academic institutions, including the United Front Work Department, the All-China Federation of Industry and Commerce, and the Chinese Society of Private Economy at the Chinese Academy of Social Sciences.
demographic and personal information. We use the National Economic Research Institute (NERI) database to generate indicators of province-level variation in LSC.

At the outset, we should emphasize that this is a firm-level dataset that measures firms’ most frequent responses to disputes, not a dispute-level dataset. The survey asked the firms about the type of disputes most frequently encountered in the year of survey (e.g., disputes with government, with businesses, and with others), which we control for in the analyses. However, no questions were asked about each dispute, e.g., issues of conflict and monetary cost. Nor do we know about the firms’ trading partners or details about the process of dispute resolution. We acknowledge the limitations in our dataset but, at the same time, stress that large-sample dispute-level data of firms are rare not only in China but also in developed countries. In most of the existing literature, court case files were used to study dispute resolution dynamics. However, such data reflect only disputes that are elevated to courts and provide no indication of alternative means by which disputes are handled (Siegelman and Donohue 1990). To understand patterns of dispute resolution, it makes sense to start at the base – that is, by asking how subjects respond generally to actual or hypothetical dispute encounters. This method is used in a variety of survey-based studies on disputes across different countries (Frye 2006; Gallagher and Wang 2011; Hendley, Murrell, and Ryterman 2000; McMillan and Woodruff 1999; Michelson 2007b; Michelson and Read 2011; Tsai 2007, Chapter 5).

**Dependent Variable**

We generate our dependent variable based on a question that asked “Which is the most frequently method used to resolve disputes encountered by your firm?” Respondents were

---

6 One advantage of the primary survey question we used to generate our dependent variable is that it asked about a firm’s actual experiences in dealing with disputes and not a hypothetical situation that they had not encountered in practice.
presented with four options (see Table 1): (1) use courts, (2) negotiate and mediate, (3) seek intervention from government, and (4) other. We generate the dependent variable Use Courts based on this question. Use Courts equals 1 if the firm reported that it used litigation most frequently to resolve disputes and 0 if the firm reports any of the other methods as most frequently used. Firms may use a combination of methods and negotiations before deciding to use courts (Michelson and Read 2011; Tong 2009); thus, we acknowledge that an expressed choice of litigation does not preclude other methods before or during the course of litigation. That said, if a firm indicates “use courts” as the most frequent method of dispute resolution, which only 9.6% of the firms did, this response signals an unusually strong indication of a firm’s willingness to use courts.

**Measures of Political Connections**

On a theoretical level, we conceptualize political connections as having the privilege of personal interactions with governmental authorities and first-hand insights into processes of decision making. Empirically, we operationalize politically connected firm owners as (i) Former Officials or (ii) Delegates.

Delegate is a dichotomous variable indicating whether a firm’s owner is a delegate of the People’s Congress or the People’s Consultative Conference, which are two political organs at the national and local levels that parallel legislatures in democracies (O’Brien 1990). The Congress drafts and approves laws, whereas the Conference contributes opinion to policy making. The former officially nominates and elects party-state leaders, a role that congressional members have increasingly asserted in recent years (Manion 2008). From the 1990s onwards, the Communist Party stepped up efforts to recruit private entrepreneurs into the formal political
system, inviting them to serve as congressional delegates (Dickson 2008). Firms are also known to actively seek delegate positions to enhance their political standing, as members advise party and government officials through regular meetings (Li, Meng, and Zhang 2006; Ma and Parish 2006; Tsai 2007, Chapter 5).

Former Official measures whether the firm owner previously worked as a government official at the directorate (chu) rank, equivalent to a county magistrate, ministerial division chief, or higher rank. The directorate rank is a distinct cutoff point in the administrative hierarchy that indicates membership in China’s stratum of “political elites” (Walder 2004, 195). We expect firm owners who previously held elite bureaucratic positions to hold extensive and deep contacts in the party-state administration. This measure has the theoretical value of isolating the effects of the most exclusive political connections, distinguishing our analysis from previous studies that measured former cadres or public employees without delimiting ranks (Choi and Zhou 2001; Malesky and Taussig 2008; Michelson 2006).

Being a delegate or former official constitutes two main avenues by which firm owners gain direct and close connections to the government in the Chinese context. The type of political connections we capture is distinguished from measures of indirect connections, such as whether one has “relatives working in the bureaucracy” or “friends in the government” (Kung and Ma 2011; Tsai and Xu 2012). It is also distinguished from political connections acquired without regular face-to-face interaction with officials and those that are less exclusive than delegate membership or former official posts, such as Chinese Communist Party (CCP) membership (Dickson and Rublee 2000). Although PC can be defined in infinite ways, we choose to focus on elite and exclusive forms of political connection because they usefully specify the effects of the strongest type of PC.
Moderator: Legal Services Capacity

To generate the moderator, Legal Services Capacity, we use province-level indices developed in the NERI database (for details, see Fan and Wang 2000), which is available only at the province level. A higher value of LSC indicates that the legal system in the province has greater technical efficiency. LSC is a composite index constructed based on Legal Services Development and Court Capacity. Legal Service Development is a standardized index measuring the availability of professional legal services in a province based on two sub-indices: the number of lawyers divided by the province’s population and the number of accountants divided by the province’s population. Court Capacity is a standardized index measuring the capacity of courts in the province to handle cases based on two sub-indices: the number of business lawsuits filed in the survey year divided by the province’s GDP and the number of business lawsuits concluded in the survey year divided by the province’s GDP.

We elaborate on the merits and shortcomings of Legal Services Capacity. As a measure of province-level variation in the availability of legal professionals and court efficiency, we use LSC to proxy for the “knowledge gap” between PC and non-PC firms within each province. Intuitively, one may question if a province-level proxy is too coarse given the huge institutional complexities across China. In terms of data constraint, there is no equivalent measure of LSC we

---

7 The earliest year in which NERI data is available is 1997, so we matched the 1997 NERI data (published in Fan and Wang, 2000) to measure the institutional environment of different provinces to the surveys collected in 1995 and 1997. Although province-level measures in 1995 are not available, institutional changes of the legal system in different Chinese provinces occurred only steadily and gradually, especially given the Chinese government’s emphasis on gradual rather than abrupt reforms. For example, the values of Legal Services Capacity in 1997 and 2000 are highly correlated (correlation = 0.92, p < 0.000) Therefore, changes in the legal systems are mostly likely to be moderate in a time span of only two years, such that inter-provincial variation among different provinces should not be dramatically different from 1995 to 1997. Thus, we can use the NERI data obtained in 1997 to proxy for provincial-level variation of legal services capacity in 1995. We matched the 2000 NERI data (published in Fan and Wang, 2001) to the survey data collected in 2000.

8 The indices are standardized as follows. Let \( V_i \) denote the value of the \( i \)th province for the variable of interest. Let \( V_{\text{min}} \) and \( V_{\text{max}} \) denote the minimum and the maximum values of the variable among all provinces in 1997 and 2000. Then the standardized index value for the \( i \)th province for this variable is \( (V_i - V_{\text{min}})/(V_{\text{max}} - V_{\text{min}})*10 \).
know of at the sub-provincial levels, and even if there were, there would be limited observations in each city or county in our survey to merit a robust analysis. However, more importantly, on a theoretical level, we contend that province is actually an appropriate level of analysis. It is well known that following market reforms in the post-1979 period, the central government awarded tremendous autonomy to province-level governments, resulting in a distinct structure of market fragmentation and local protectionism along *provincial* borders (Donnithorne 1972; Wedeman 2003; Young 2000). In practice, then, firms within a county or city do not only face disputes or go to courts with firms within the same sub-provincial jurisdictions. Instead, it is far more likely that firms are grouped at the provincial level for two reasons: restrictions on market entry are imposed by provincial governments, and firms shy away from going to court outside of their home province because state and judicial protectionism of local firms is common (Howson 2009).

Another theoretical leverage of *LSC* is that it provides a rationale for both H2(a) and H2(b). Hypothetically, an ideal measure of the “knowledge gap” would come from questions in the survey that directly measure firms’ legal knowledge, but regrettably, these were not asked. However, even if such a firm-level proxy was available, it could not account for H2(b) [political advantage], which we observe in our analyses. A direct measure of firms’ legal knowledge would predict that if political advantage dominates, then as the knowledge gap narrows, the positive correlation between PC and the use of courts does not weaken, i.e., the rejection of H2(a). However, what we find and later report, using LSC as the moderator, is that the positive correlation between PC and the use of courts actually becomes stronger even as the knowledge gap shrinks, consistent with H2(b). We argue that this finding is possible because higher LSC implies not only a smaller knowledge gap but also that PC firms can more readily use courts when legal professionals abound and court efficiency is high.
Lastly, our moderator of LSC is an objective measure of judicial technical capacity (availability of legal professionals and court efficiency), which has advantages over attitudinal measures of judicial fairness. There have been notable efforts to survey citizens’ subjective evaluation of court performance. However, as acknowledged, the vast majority of citizens surveyed had never interacted with courts (Michelson and Read 2011), and evaluations are captured via vignettes rather than realities in home provinces (Wang 2013). Hence, whereas these surveys are highly valuable in assessing public impressions, they are less appropriate in approximating the objective knowledge gap between PC and non-PC firms that encounter actual disputes. In sum, despite some limitations of LSC, it is not only the best available moderator but also compatible with our theoretical account.

**Other Firm-Level Variables**

To remedy the possibility that LSC may be confounded with other province-level firm characteristics, we included a battery of controls in the regressions. We include firm-level variables, controlling for year of survey, firm’s age, industry, provincial location, number of employees, profits, firm owner’s age, and owner’s education level. We also control for the type of disputes that firms most frequently encountered in the survey year: disputes with government bureaus, firms, and others. Finally, we include three indices from the NERI database that measure the development of the private sector in each province: Private Sector Industrial Output, Private Sector Fixed Asset Investment, and Private Sector Employment.

In the final sample of 3,980 firms, the average firm owner was 44 years old and received approximately 11 years of formal education. Approximately 42.6% of firm owners held positions

---

9 Moreover, among the surveys we know, data are not available for public access and do not match our years of analysis.
in either the Congress or Conference, and 1.3% were former officials. The average firm had been in business for over six years, hired 114 employees, and made a profit of 115 million Yuan. Approximately 74.9% of the firms reported that they most frequently experienced disputes with other businesses, and only 9.5% with government bureaus and officials. Only 9.6% of the firms reported that they most frequently used courts, compared to other options, to resolve disputes.

**Methods**

We estimate logit models to predict the probability of *Use Courts* based on firm-level variables that measure political connections and other characteristics, province dummies, and industry dummies. To test the moderating effects, we report the interaction terms of the logit models and then examine the simulated interaction effects following the simulation approach in King, Tomz & Wittenberg (2000) and Zelner (2009) because the conventional method of including an interaction term of two variables of interest in a logit model may not represent the true interaction effect of the variables (Norton, Wang, and Ai 2004). We report robust standard errors throughout our analyses.

---

10 In our models that examine the moderating effect of LSC, we use indices that leverage variation at the province level. To avoid multi-collinearity in testing for province-level moderating effects, we replace province dummies with geographic region dummies to control for unobserved effects shared by geographically adjacent provinces. The six regions include the East Region (four provinces), the Central Region (six provinces), the North West Region (six provinces), the North East Region (three provinces), the South West Region (six provinces), and the Coastal Region (six provinces). We base the categorization of regions on the China Statistical Yearbook.

11 The simulation-based approach represents the correct interaction effects because the interaction term in a nonlinear model does not equal the interaction effect. Norton et al. (2004) show that in nonlinear models, 1) the sign of the true interaction effect may be different for different observations and thus cannot be inferred from the coefficient of the interaction term alone, 2) the true statistical significance of the interaction effect cannot be determined from the z-statistic reported in the regression output of the interaction term, and 3) the marginal effect of a change in both interacting variables does not equal the marginal effect of changing the interaction term. More discussion is included in the online Supporting Information.
EMPIRICAL RESULTS

Descriptive Patterns of Dispute Resolution

Before discussing the results of statistical analysis, we present some general patterns of dispute resolution for different types of disputes in the three survey years. Table 1 reports the percentage of different resolution methods for three types of disputes: disputes with businesses, government, and other parties. On average, 84.6% of firms report using private mediation and negotiation as the most frequent method of dispute resolution for all three types of disputes. Using courts is the second— but distant second—most popular resolution method, accounting for only 9.6% across all three types of disputes. This is followed by seeking government intervention (informally), chosen by 4.4% of firms. Courts are more frequently used to resolve disputes with businesses than with governments because firms are likely reluctant to challenge state agencies in court (Peerenboom and He 2008; Tong 2009). Like others (Clarke, Murrel, and Whiting 2008; Whiting 2010), we observe that the use of courts has become more popular over time. Table 1 reports the summary statistics.

<table>
<thead>
<tr>
<th>Resolution Methods</th>
<th>Disputes with Businesses</th>
<th>Disputes with Governments</th>
<th>Disputes with Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Obs</td>
<td>%</td>
<td>Obs</td>
</tr>
<tr>
<td>Use Courts</td>
<td>317</td>
<td>10.64%</td>
<td>31</td>
</tr>
<tr>
<td>Negotiation or private mediation</td>
<td>2558</td>
<td>85.90%</td>
<td>279</td>
</tr>
<tr>
<td>Seek government intervention</td>
<td>69</td>
<td>2.32%</td>
<td>59</td>
</tr>
<tr>
<td>Ignore</td>
<td>34</td>
<td>1.14%</td>
<td>12</td>
</tr>
<tr>
<td>Total Obs</td>
<td>2978</td>
<td></td>
<td>381</td>
</tr>
</tbody>
</table>
Main Effects

We now examine the characteristics of firms that prefer using courts over informal means of dispute resolution, focusing on political connections. Table 3 reports the results of the logit models. The results should be interpreted as the probability of using courts as the most frequent mode of dispute resolution vis-à-vis alternative methods. Model 1 contains all control variables, and Model 2 adds Delegate and Former Official.

Supporting H1b, the results in Table 3 show that the probability of using formal legal procedures to resolve disputes increases with political connections. Delegate is a positive and statistically significant \((p < 0.05)\) predictor. Holding all other variables at their median values, being a Delegate increases the probability of using courts by 2.2 percentage points. Former Official is also a positive and statistically significant \((p < 0.10)\) predictor. Holding all other variables at their median values, prior political office increases a firm’s probability of using courts by 8.6 percentage points. Given that only close to 10% of firms reported litigation as the most frequent means of resolving disputes in our sample, if all the sampled firms previously held office, the mean value of Use Courts would increase by 85.6% (from 10 to 18.6 percentage points). Likewise, if the sampled firms were all delegates, the predicted mean value of Use Courts would increase by 22.4% (from 10 to 12.4 percentage points).

The substantive effects of political connections have to be interpreted in view of the small likelihood that firms would report Use Courts as the most frequent method of dispute resolution. As we have emphasized, 84.6% of firms report private mediation as the primary mechanism, a pattern consistent not only with other studies in China but also with legal studies in general. It is well established in both game-theoretical and empirical literature that, in any society, firms prefer to avoid litigation because of high costs and delays, turning to courts only as a last resort.
Another sharp illustration can be found in Indonesia, where despite major campaigns led by the World Bank and IMF to encourage firms to resolve contractual disputes in courts, firms refused to use them (Andrews 2013, 35). Although litigation is on the rise, China traditionally has been and remains a distinctly non-litigious society (Zeng 2009). In fact, a recent study asserts that “firms all avoid courts,” noting that some Chinese firms even include stipulations in their contracts to seek mediation over litigation in the event of disputes (Wang 2013, 46). Thus, in the context of our survey, it takes tremendously strong motivation and supporting factors to induce any firm to report litigation over other options, particularly the overwhelming norm of mediation, as the most frequent method of dispute resolution. Once an overall non-litigious trend is taken into account, it becomes apparent that the substantive effects of Delegate and Former Official are not trivial.

Some results of the control variables in Table 3 are worth noting. Education shows no statistically significant effect, indicating that it is not formal schooling or literacy per se that empowers the use of courts. Older firms and older owners are more likely to use courts. More experience might allow one to accumulate legal knowledge and/or political capital, both of which could enhance the probability of using courts. This observation partially supports Galanter’s (1974) seminal argument that the American legal system privileges “haves” with legal experience (e.g., large corporations). However, reflecting a non-democratic and state-dominant setting, our paper highlights political connections as the dividing line between “haves” and “haves-not.”
Table 3. Main Results.
DV: Use of Courts

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delegate Position</td>
<td>0.248**</td>
<td>0.233</td>
<td>0.261**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.126)</td>
<td>(0.278)</td>
<td>(0.122)</td>
<td></td>
</tr>
<tr>
<td>Former Official</td>
<td>0.684*</td>
<td>0.519</td>
<td>-0.340</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.379)</td>
<td>(0.382)</td>
<td>(0.950)</td>
<td></td>
</tr>
<tr>
<td>Delegate Position X Legal Services Capacity</td>
<td>0.007</td>
<td></td>
<td></td>
<td>0.151</td>
</tr>
<tr>
<td>Former Official X Legal Services Capacity</td>
<td></td>
<td></td>
<td></td>
<td>(0.145)</td>
</tr>
<tr>
<td>Dispute with Businesses</td>
<td>0.785***</td>
<td>0.785***</td>
<td>0.784***</td>
<td>0.782***</td>
</tr>
<tr>
<td></td>
<td>(0.199)</td>
<td>(0.199)</td>
<td>(0.200)</td>
<td>(0.200)</td>
</tr>
<tr>
<td>Dispute with Government</td>
<td>0.489*</td>
<td>0.484*</td>
<td>0.435</td>
<td>0.435</td>
</tr>
<tr>
<td></td>
<td>(0.263)</td>
<td>(0.263)</td>
<td>(0.265)</td>
<td>(0.265)</td>
</tr>
<tr>
<td>Firm Age</td>
<td>0.041***</td>
<td>0.035***</td>
<td>0.034***</td>
<td>0.034***</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
<td>(0.013)</td>
<td>(0.013)</td>
<td>(0.013)</td>
</tr>
<tr>
<td>Employee #</td>
<td>0.000</td>
<td>-0.000</td>
<td>-0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Profit</td>
<td>0.010</td>
<td>0.008</td>
<td>0.022</td>
<td>0.022</td>
</tr>
<tr>
<td></td>
<td>(0.022)</td>
<td>(0.022)</td>
<td>(0.021)</td>
<td>(0.021)</td>
</tr>
<tr>
<td>Donation</td>
<td>0.013</td>
<td>0.010</td>
<td>0.003</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.026)</td>
<td>(0.025)</td>
<td>(0.025)</td>
</tr>
<tr>
<td>Owner Age</td>
<td>0.017***</td>
<td>0.016***</td>
<td>0.015***</td>
<td>0.015***</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>Education</td>
<td>-0.007</td>
<td>-0.011</td>
<td>-0.014</td>
<td>-0.014</td>
</tr>
<tr>
<td></td>
<td>(0.023)</td>
<td>(0.023)</td>
<td>(0.023)</td>
<td>(0.023)</td>
</tr>
<tr>
<td>Year</td>
<td>0.084**</td>
<td>0.071*</td>
<td>0.074</td>
<td>0.075</td>
</tr>
<tr>
<td></td>
<td>(0.040)</td>
<td>(0.041)</td>
<td>(0.048)</td>
<td>(0.048)</td>
</tr>
<tr>
<td>Industry Dummies</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Province Dummies</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Province Controls</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Region Dummies</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Constant</td>
<td>-170.136**</td>
<td>-145.843*</td>
<td>-152.326</td>
<td>-154.013</td>
</tr>
<tr>
<td></td>
<td>(79.822)</td>
<td>(81.456)</td>
<td>(95.811)</td>
<td>(95.803)</td>
</tr>
<tr>
<td>Observations</td>
<td>3,980</td>
<td>3,980</td>
<td>3,980</td>
<td>3,980</td>
</tr>
</tbody>
</table>

Notes:
- Our dependent variable measures whether firms most frequently use courts to resolve disputes vis-à-vis alternative methods.
- Robust standard errors in parentheses.
- *** p<0.01, ** p<0.05, * p<0.1
- The province controls in Models (3) and (4) contain the following control variables: Legal Services Capacity, Private Sector Industrial Output, Private Sector Fixed Asset Investments, and Private Sector Employment.
Moderating Effects

In this section, we examine the moderating effects of Legal Services Capacity. We present the interaction terms in Models 3 to 6 in Table 3. Although the interaction terms are not statistically significant in Table 3, it must be noted that because we used non-linear parametric logit estimation, these results alone do not indicate the absence of statistically significant true interaction effects. As Norton et al. (2004) demonstrated, the statistical significance of true interaction effects cannot be determined by the z-statistic reported in the nonlinear regression output of the interaction terms. (We provide more elaboration of the mathematical proof in the SI.) Therefore, in the next step, we follow the simulation-based approach of King, Tomz & Wittenberg (2000) and Zelner (2009) to graphically present the interaction effects of the logit models.

Recall our strategy for testing H2(a) and (b): political advantage versus knowledge advantage. We use higher levels of Legal Services Capacity to proxy for a smaller “knowledge gap” between PC and non-PC firms. If the positive correlation between political connections and the use of courts is stronger even in provinces where the “knowledge gap” is smaller, the result would support H2(b): political advantage dominates knowledge advantage. The reverse would support H2(a): knowledge advantage dominates political advantage.

In the remaining empirical discussion, we will offer four figures in two sets that graphically present the results of the true interaction effects between Legal Services Capacity and our two measures of political connections: Delegate and Formal Official. Each set of figures follows the same logic. We begin with Legal Services Capacity and Delegate, as shown in Figure 2 (including (a) and (b)). Figure 2(a) shows the change in the predicted probability of Use
Courts (y-axis) as values of Legal Services Capacity (x-axis) rise for Delegates and non-Delegates.

Three points stand out in Figure 2(a). First, for all firms, the probability of using courts increases as LSC increases, as evident from the upward sloping lines, which suggests that regardless of firm type, using courts is more prevalent in provinces where courts are more technically efficient and legal services are more widely available. Second, at any given level of LSC, Delegates (solid line) are always more likely to use courts than non-Delegates (dash line), further confirming the first-order positive relationship between political connection and the use of courts, as hypothesized in H1(b). Third, as LSC increases, the probability of using courts increases at a steeper rate for Delegates than non-Delegates. That is, Delegates are more likely than non-Delegates to use courts even in areas with higher legal services capacity (where the “knowledge gap” is smaller).

**Figure 2.** Moderating effect of Legal Services Capacity on the relationship between Delegate and the probability of using courts to resolve disputes.  
2(a) 2(b)
Figure 3. Moderating effect of Legal Services Capacity on the relationship between Former Official and the probability of using courts to resolve disputes.

Notes:
• Figures 2, and 3 are constructed based on the Models (3) and (4) in Table 3, respectively.
• The y-axis in Figures 2(b) is the difference in the predicted probability of using courts to resolve disputes by firms whose owners hold positions in the People’s Congress or the People’s Consultative Conference (Delegate Position = 1), and by firms whose owners do not hold such positions (Delegate Position = 0), while all other explanatory variables are held at their mean values in a logit model.
• The y-axis in Figures 3(b) is the difference in the predicted probability of using courts to resolve disputes by firms whose owners were Former Official, and by firms whose owners were not Former Official equals 0, while all other explanatory variables are held at their mean values in a logit model.
• The dotted symbols in Figures 2(b) and 3(b) denote the regions in which the difference of the predicted probability differs significant from zero at the 90% level.

Figure 2(b) provides an alternative representation of the results in Figure 2(a). It plots the difference of the predicted probability of Use Courts between Delegates and non-Delegates (y-axis) against Legal Services Capacity (x-axis). The dotted region indicates a statistically significant association between Delegate and Legal Services Capacity at a 90% confidence level. (All but one set of our results show statistical significance at the 95% level, which we will later discuss.) Again, consistent with Figure 2(a), the upward-sloping curve in Figure 2(b) indicates that the difference in the probability of using courts between Delegates and non-Delegates increases where LSC is higher. This effect is statistically significant at medium levels (second and third quartile) of LSC. Put differently, in areas where there is a smaller “knowledge gap”
between PC and non-PC firms, *Delegates* are even *more* likely to use courts than non-*Delegates*. This pattern supports the interaction Hypothesis H2(b): political advantage dominates knowledge advantage.

Following the same logic, Figures 3(a) and 3(b) present the interaction effects of *Legal Services Capacity* and the other measure of PC, *Former Official*. The patterns observed in Figure 2(a) are similarly observed in Figure 3(a). Specifically, the probability of using courts increases at a steeper rate for *Former Officials* than non-*Officials* even as *Legal Services Capacity* increases, consistent with H2(b). Figure 3(b) graphs the difference in the probability of using courts between *Former Officials* and the remaining firms. The difference increases with the value of LSC. The correlation patterns are consistent with those in Figures 2(a) and 2(b).

We acknowledge that a constraining part of our tests is our theoretical choice to operationalize PC as *Former Officials*, which has limited variation (1.4% of firms). However, including Former Officials in comparison to *Delegate* usefully shows that exclusivity of connections does have a greater substantive effect on *Use Courts*. As a robustness check, we report regressions with an alternative moderator and an alternative measure of PC: *Former Public Employees*, which relaxes the rank criteria and provides more variation across observations. In a total of six tests, all of our results except *Former Officials* *Legal Services Capacity* \( p < 0.10 \) are statistically significant at a 95% confidence level (see Supporting Information).

In summary, our results show a positive association between PC (i.e., *Delegate Position* or *Former Official*) and the use of courts. The probability that PC firms use courts more than non-PC firms is *higher* in areas with higher legal services capacity, where the “knowledge gap” is smaller. In other words, even in areas where resources are more widely available for non-PC
firms to compensate their knowledge disadvantage, PC firms continue to use courts more than non-PC firms. Both sets of results support H2(b) – that political advantage, rather than knowledge advantage, is the dominant mechanism linking PC to the use of courts.

**Why PC Firms Might More Readily Exercise Advantage in Courts Than in Other Forums**

Our finding that PC firms use courts more primarily because of political advantage, as opposed to knowledge advantage, raises an interesting question of why and under what conditions PC firms might more readily exercise political advantage in courts than in non-legal forums. Our survey data are not equipped to answer, much less test, this question; however, we can speculate on some explanations based on the Chinese legal context.

First, there may be disadvantages to using informal forums, such as asking government officials to personally intervene or participate in mediation processes. For government officials, it can be politically risky to show their presence to the disputing parties. As a private firm owner explained, “A government official who personally intervenes may have to consult a higher superior, and the networks are very complicated. So as much as possible, they do not wish to appear in person. Besides, the media these days are sensitive to corruption reports, so if their intervention is known, then the problem will get blown up.”

Conversely, we can imagine that exercising political influence through courts is more covert, allowing any intervention to be shielded behind a legal apparatus in which judicial personnel are subordinated to the government.

Second, there could be instances where politically connected firms, which tend to be more ambitious, actually want to build a track record of using courts to resolve disputes. This is most salient when firms aspire to become publicly listed, in which case using courts projects a

---

12 Interview with private firm, March 28, 2013
modern, law-abiding image to investors and regulators. The logic might be extended to private firms seeking foreign partners or wishing to invest overseas. Although we have no information on the firms’ stock listings, the surveyed firms do report whether they collaborated with or are seeking foreign partners. Consistent with the logic, we find that the positive main effects of Delegate and Former Officials on the use of courts persist among the firms that have or seek partnerships with foreign firms but fail to be statistically significant among those that do not (results available upon request).

A third possible reason is that transacting partners are more likely to initiate litigation when facing disputes with PC firms and the latter accepts this option believing it to be to its advantage. (The survey question used to generate the dependent variable does not indicate whether a firm that reports “use courts” as the most frequent method of dispute resolution sues, defends, or does both.) As one judge noted in a conversation, “When transacting with a politically connected party, the other party, if lacking connections, may decline to negotiate or mediate, thinking the former would be advantaged [in an informal avenue]. So even though the costs of litigation are higher than in mediation, they may rather go to court.” Indeed, this comment echoes research that finds a Chinese paradox in which even though few ever use the courts, most citizens express significant optimism about the law (Gallagher 2006; see also Michelson and Read 2011). Gallagher finds that even those bruised from actual legal experience do not surrender but instead become more informed and tenacious (Gallagher 2006, 800). In circumstances where a politically connected firm feels it has a reasonable cause coupled with political advantage, it may end up in court with parties of disputes.

---

13 We thank Nicholas Howson (Professor of Law, University of Michigan Law School) for providing this insight.
14 Interview with city-level judge, March 25, 2013
CONCLUSION

In this article, we examined whether and how political connections shape the use of courts for dispute resolution among private firms in a transitional and authoritarian setting. Our evidence affirms that PC firms are more inclined than non-PC firms to employ litigation over alternative means of dispute resolution. Further evidence suggests that this pattern results more from the political advantage of PC firms in potentially influencing adjudication (a perverse mechanism) than from their knowledge advantage (a positive mechanism) in navigating the judicial system. In short, we report a relationship of *perverse complementarity* between political connections and the use of formal legal procedures.

Our study underscores conditional and historical differences between early Western Europe and present-day transitional and authoritarian countries such as China. The substitutive view of formal laws and informal networks is premised on the substantial passage of time and the absence of a strong authoritarian state in the process of legal development. The edifices of law can be quickly built, but one cannot assume that norms and practices of impartiality will follow, particularly when courts are subordinated to politics by design. In institutional landscapes such as those of China, we can expect a fusion of *legality with politics* and *the informal with the formal*.

The limitations inherent in the data we use for our study invite future research in several directions. Like most statistical studies, our findings leave open questions about the *process* of dispute resolution and litigation, which can best be answered by qualitative methods. Further, to test precise theories about firms’ preferences of dispute resolution methods, a dispute-level dataset is necessary. However, collecting such data is challenging because one would have to track each dispute for each firm, which would almost certainly unfold in sprawling dimensions.
The closest example we know of a dispute-level dataset is a paper by Lumineau and Oxley (2012) that examined 102 dispute cases drawn from legal files at a French law firm. The authors noted that such data are “highly confidential” and “unusually detailed.” However, even their data reflect disputes that were already elevated to a law firm rather than the entire pyramid of disputes for each firm. Although a firm-level dataset is limited in many ways, it has the benefit of capturing larger patterns, albeit with less nuance, posing new questions and laying the foundation for future work aimed at dispute-level data collection.

Finally, one might wonder if our study is limited by the unique characteristics of the Chinese court system, which, after all, is unabashedly subordinated to political executives. However, as is well known among political scientists, there are many authoritarian governments that exercise considerable control over courts (Ginsburg and Moustafa 2008; Magaloni 2003; Solomon 2007). It is possible to replicate our study across countries and compare national- and firm-level variances. Furthermore, our analytical strategy can be applied to a variety of analyses to tease out enmeshed mechanisms that are otherwise difficult to disentangle. Despite the limitations noted above, we hope that our study sheds new empirical and theoretical light on the relationship between informal networks and formal institutions as well as the pathway by which they interact.

**Supporting Information**

Additional supporting evidence may be found in a separate attachment as follows:

1. Elaboration on true interaction effects in nonlinear models
2. Additional test of alternative moderator
3. Additional test of alternative measure of PC
4. A summary of results for main and additional test
References


