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The Political Position Generator: A New Instrument for Measuring Political Ties in China

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Abstract

This paper proposes a novel instrument – the political position generator - for measuring individuals' political ties, or personal, affective connections to state officials and other political actors. It adopts and adapts the more general position generator framework in social capital research to capture three key dimensions of political ties – upper reachability, network diversity, and tie strength. The measure is validated with data from a representative survey of the Chinese population and three scales representing the three political ties dimensions are created. In correlational and multivariate regression analyses, we find initial evidence of the instrument's criterion-related (discriminant and concurrent) validity.

Keywords: political tie, China, guanxi, social capital, position generator

Introduction

Political ties, or personal connections between state officials and individuals without official state positions, have rarely been analyzed from a social capital perspective, despite growing recognition of their significance for a variety of economic, social and political outcomes (e.g., Kotabe et al., 2014; Li et al., 2008; Tsai and Xu, 2018). In this paper, we propose a new measure of political ties in China that incorporates three distinct elements of social networks identified in leading social capital theories and measurement approaches: network diversity, or access to a variety of different political positions through one's personal ties; upper reachability, or access to high-ranked officials; and tie strength, or relational closeness. Specifically, we expand upon previous, narrower measurements of this construct (e.g., Bian, 2008; Peng and Luo, 2000; Tsai and Xu, 2018) by adapting the social position generator framework (Lin and Dumin, 1986) to the specific context of Chinese political ties, resulting in an instrument we term the "political position generator." The Chinese political and cultural context lends itself particularly well to the development of a multidimensional measure of political ties: Chinese culture has long emphasized the importance of *guanxi* networks – consisting of ties that are simultaneously affective and instrumental – for economic and societal advancement, and the country's Marxist-Leninist political system generates opportunities for influence at numerous positions within the state bureaucracy (Bian, 2018).

Furthermore, we conduct a first validation of the political position generator with data from a recent representative survey of China (N = 3,144). Roughly one-third of respondents reported at least one political tie, and non-response rates were very low, confirming the political position generator's clarity, relevance, and lack of political sensitivity. Based on the response data, we construct three scales based on individuals' *number* of personal ties to different official and semi-official institutions; their *highest-ranked* tie within the official party-state apparatus;

and their *strongest* tie in terms of familial or quasi-familial bonds. We find evidence for the scales' discriminant validity over and above demographic variables, other social network measures, and the respondents' own political position, with multivariate regression analyses including these variables explaining only at most one-quarter of the overall variance in political ties. We also find evidence of the scales' concurrent validity in the form of substantial correlations with several variables related to political participation and political attitudes. Finally, in the conclusion, we discuss the limitations of our work, provide directions for future research with the political position generator, and discuss possible extensions to other national contexts.

Theoretical Background

Political Ties as Bridging Social Capital

In this paper, we propose a new instrument for measuring individuals' political ties based on social capital theory and measures – the political position generator. While scholars have defined social capital in a number of ways (for an overview, see Lin, 1999), our approach falls within the tradition focusing on the “resources embedded in social relations and social networks” (Lin and Erickson, 2008, p. 4), which can be directed toward individual and collective goals.

Social capital can be classified along a number of dimensions. One particularly relevant distinction is between bonding social capital, or ties among people who are alike in some aspect, and bridging social capital, ties among people who are different (Gittell and Vidal, 1998; Putnam, 2000). Bonding and bridging social capital should not be considered mutually exclusive – a church social network, for example, encompasses people who all have the same religion (bonding) but might be of different social classes or ethnicities (bridging). Thus, most social ties are likely to be bonding on some dimensions and bridging on others. One important form of

bridging social capital are the ties connecting state and non-state actors (Mladovsky and Mossialos, 2008; Woolcock, 1998), which we refer to as “political ties”.

Political ties have rarely been analyzed within the social capital framework (for exceptions, see Nee and Oppen, 2012; Tsai and Xu, 2018). Political ties bear some relation to the concept of clientelism, which is similarly based on personal dyadic relationships between a state actor (“the patron”) and non-state actor (“the client”) (Hicken, 2011). However, while clientelist relationships are based not on affective bonds but on the “contingent and targeted distribution of selective goods to supporters in exchange for their loyalty” (Grzymala-Busse, 2008, p. 639), social capital goes beyond such explicit *quid pro quo*s to consider the access to resources inherent in ongoing social relationships (Lin and Erickson, 2008). Thus, a promise by a member of parliament to provide residents of his district with government jobs in exchange for their votes would be an example of a clientelist relationship, while the long-standing personal relationships between that same member of parliament and his old university classmates – and the access to government resources that entails -- would be an example of political ties as social capital.

Hence, our concept of political ties builds upon the political science and development literature on the role of informal local intermediaries between citizens and the state in societies such as India (e.g. Krishna, 2011; Ruud, 2000), Mozambique (Fairbairn, 2013), and the Arab world (Kropf and Newbury-Smith, 2016; Lackner, 2016), in which “social practices of networking are helpful in penetrating a recalcitrant state” (Ruud, 2000, p. 275) and often serve as a cheaper, more socially acceptable alternative to a bribe or other explicit *quid pro quo*. Similarly, Ribot and Peluso (2003) identify “access to authority” in the form of state officials and institutions as one of the central means through which individuals are able to gain access to land and other valuable resources, regardless of the prevailing property rights. Finally, our concept of political ties resembles an extensive discussion within the economics and management literature

on the role of private-sector executives' personal ties to state officials in explaining differences in various aspects of firms' performance in both the developing and developed world (Amore and Bennedsen, 2013; Fisman, 2001; Goldman et al., 2009; Haveman et al., 2017; Johnson and Mitton, 2003; Kotabe et al., 2014; Li et al., 2008; Nee and Oppen, 2012; Sun et al., 2010).

The Chinese and Comparative Context

While the concept of political ties can shed light on the individual-level manifestations of state-societal relations in a variety of political contexts, they are particularly relevant in China for both political and cultural reasons. As in other East Asian cultural contexts, social networks continue to play a central role in China's economy and society despite its transition to a more market-based economic system (Bian, 2018; Bian and Ikeda, 2018). Of particular relevance in the Chinese context is *guanxi*, defined as "a dyadic, particular and sentimental tie that has the potential of facilitating favor exchange between the parties connected by the tie" (Bian, 2006, p. 312). In contrast to Western societies, where a person's more instrumental professional network and more affective personal network are viewed as largely distinct, *guanxi* ties are both deeply affective and clearly understood as built to facilitate ongoing favor exchange (Bian and Ikeda, 2018). In this way, they bear similarity to affective-instrumental ties from other societies, including *atmiya-swajan* in West Bengal (Ruud, 2000) and *wasta* in the Arab world (e.g. Hutchings and Weir, 2006; Kropf and Newbury-Smith, 2016). We expect most political ties in China to take the form of *guanxi* ties, and view them as particularly informative in light of their combination of sentimental and instrumental functions.

Moreover, as a Leninist political system, the Chinese state comprises territorial divisions at the central, provincial, municipal¹, county/district, or town level. It is composed of numerous government and Communist Party units (commissions, ministries, bureaus and departments) at the national level, which replicate themselves in a vertical chain through lower levels of government. Individual units receive administrative guidance from above, but are also subject to the leadership of the local governments to which they belong. Guanxi ties to state and party officials take on particular significance in such a hierarchical, fragmented authoritarian system, as noted by Walder (1986) in his classic work on the “neo-traditionalist” nature of Chinese Communism during the early reform era. On the one hand, people in official positions have significant room for maneuver in terms of granting personal favors to their guanxi connections, a phenomenon that has been particularly widely studied among private-sector managers and entrepreneurs (see e.g., Baum and Shevchenko, 1999; Haveman et al., 2017; Nee and Oppen, 2012; Wank, 1999) but is not necessarily limited to them (Bian, 2018). On the other hand, political ties serve as a resource for political participation, providing important information, access points, and protection for those seeking to engage in civic-minded action (Tsai and Xu, 2018).

Consequently, our instrument was specifically developed with the Chinese cultural and political context in mind, and takes into account some of its key features. Nevertheless, we believe that it can be adapted and applied to a wider range of national contexts. For example, Ezzati and Mozayani (2016) propose a structurally similar measure of “religious capital” in Iran, a theocratic authoritarian context in which politically-useful connections often take the form of personal ties to religious functionaries. In Mozambique, Fairbairn (2013) identifies five types of local political, social, and economic elites of relevance in the context of foreign land grabs,

¹ In the Chinese context, the word “municipal” is used to refer to an administrative level between province and district.

including tribal chiefs who wield a blend of traditional and state authority, local administrators affiliated with the ruling Frelimo party, and politically well-connected businesspeople.

Dimensions of Political Ties

Existing research largely treats political ties as a unidimensional construct (Liu and Halliday, 2011; McNally and Wright, 2010; Michelson, 2007; Tsai and Xu, 2018). However, the social capital literature makes clear that individuals' social networks can be analyzed in a number of ways, each of which plays a role in explaining how individuals mobilize social resources. Here, we focus on three aspects that we view as particularly central to our notion of political ties: upper reachability, network diversity, and tie strength. It is worth noting that the first two have been shown to be substantially correlated empirically (Bian, 2008; van der Gaag et al., 2008) and to load onto the same factor (Bian, 2008; Hsung and Lin, 2008). Nevertheless, we consider them to be theoretically distinct, and thus discuss them separately here.

First, since many valuable resources in society such as wealth, power, and status are unequally distributed, ties to people with more of these resources are likely to be more advantageous to individuals seeking to mobilize them, all else being equal (Lin, 1982). Lin (1999) defines this as the “upper reachability” of a person’s social network with regard to a given resource hierarchy. In the context of political ties, it means that a tie to a higher-ranked official is likely to provide access to greater political resources than a tie to a lower-ranked official, making the former more beneficial.

At the same time, connections to people in a wide variety of different positions can also be advantageous, as each is likely to have access to different resources that might come in handy in different situations. This is closely related to the concept of bridging social capital discussed earlier, but also appears in the literature under the terms “network diversity” (Lin and Erickson,

2008), “network variety” (Erickson, 1996), and “network heterogeneity” (Lin, 1999). In terms of political ties, having ties to officials in a variety of different ministries is likely to be more beneficial than having one’s political connections all concentrated within the same ministry, where they can quickly become redundant.

Finally, tie strength, defined by Granovetter (1973, p. 1361) as a “combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie,” can affect to what extent a person’s ties are willing to mobilize resources on their behalf. For example, while a relative or close friend may be willing to exert substantial effort or call in multiple favors, an acquaintance is unlikely go out on much of a limb for someone with whom they have such a weak connection. Thus, all else being equal, we expect a strong tie to a political official to be more advantageous than a weak tie – although it should be kept in mind that all else is often not equal, as people are more likely to know those in higher positions through weak ties rather than strong ties (Granovetter, 1973; Lin and Dumin, 1986; for China, Bian and Huang, 2015). This is the phenomenon Granovetter (1973) described as the “strength of weak ties”: bridges to unlike others, with access to novel resources and information that can prove useful in a wide variety of contexts, are more likely among weak ties than strong ties.

Existing Measures

Much of the scholarship on individuals’ political ties has relied on qualitative measures such as semi-structured interviews or case studies (e.g., Liu and Halliday, 2011; McNally and Wright, 2010; Sun et al., 2010; Welch and Wilkinson, 2004). While such methods are appropriate for small-scale studies of niche groups such as managers or lawyers, they are less well-suited to investigating the broader population-level trends captured in survey data, and suffer from

problems of generalizability. Quantitative research on political ties has generally relied on ordinal measures and name generators, each of which is discussed and critiqued below. In contrast, the position generator framework, while commonly used to measure social capital more generally, has only rarely been applied to political ties, and we discuss how it can improve upon the shortcomings of the other two measures.

Ordinal Measures

Several studies within the management literature have collected information on executives' political ties via ordinal measures in which survey respondents indicate the perceived extent of their ties to various state institutions (Peng and Luo, 2000), their actual use of ties (Kotabe et al., 2014; Li et al., 2008; Luo, 2003; Park and Luo, 2001), or exertion of effort and resources in building and maintaining ties (Guo et al., 2014; Li and Atuahene-Gima, 2001; Li and Zhang, 2007; Nee and Oppen, 2012). However, these scales are largely unidimensional and thus do not fully capture the multidimensional nature of political ties as defined above. They also fall prey to a general problem of perceptual measures, namely that respondents' conceptions of "very extensive" ties or "much effort exerted" might differ substantially. In an empirical confirmation in this, Burt and Burzynska (2017) found a lack of association between respondents' ordinal ratings of their extent of political and business ties and their actual political and business networks as measured using a name generator approach. Consequently, social capital research has generally avoided using ordinal measures to obtain information on individuals' social ties, instead relying on scales in which individuals report on structural elements of their networks (Marsden, 1990).

Name Generators

Name generators were one of the first measures of individual-level social capital to gain widespread use in the social sciences (Burt, 1984; Marsden, 1987; McCallister and Fischer, 1978), and are still prominent today (e.g. Burt et al., 2018). In their most basic form, name generators ask survey respondents to name the people in their network meeting a given criterion, and then ask follow-up questions about each of the named individuals to obtain further information on theoretically relevant characteristics of the respondent's network. For example, Burt and Opper (2017) asked Chinese entrepreneurs to name the people most valuable to their business in the previous year as well as during significant events in their firm's history going back to its founding, and followed up by asking whether any of the people named were members of the military or the Chinese Communist Party.

Name generators can be a useful tool for obtaining information on specific subsets of an individual's social network, but are compromised by high levels of forgetting (Brewer, 2000) and satisficing (Pustejovsky and Spillane, 2009), in which respondents stop providing names when they feel they have listed "enough" people fitting the criterion. This is of concern because the names respondents neglect to mention are not random: Name generators have been shown to be biased in favor of strong ties and ties with more central network positions (Marin, 2004). Thus, a name generator question asking individuals to list the people they know with connections in government, like that found in Xin and Pearce (1996), is unlikely to provide an accurate indication of the diversity dimension of political ties, as responses are likely to be skewed in favor of higher-ranked and/or strong ties. Furthermore, name generators are an inappropriate measure in sensitive contexts, where respondents may be unwilling to disclose the names or even the initials of members of their networks. Previous researchers (e.g. Burt and Burzynska, 2017;

Peng and Luo, 2000) have argued that this is true of Chinese managers and entrepreneurs, who tend to view their personal ties to state actors as a trade secret. It is also likely to hold more generally in authoritarian societies such as China, where political sensitivity is a concern for all survey researchers (Tsai, 2010).

Position Generators

Another commonly used social capital measure, the position generator (Lin and Dumin, 1986; Sapin et al., 2020), takes a sample of positions at various points in a given hierarchy and asks whether respondents know anyone in each position as well as the strength of their tie to that person. For example, Lin and Dumin's (1986) original survey asked whether respondents knew any lawyers, insurance agents, or bartenders as examples of high, moderate, and low values on a scale of occupational prestige. In this way, the position generator provides information on the diversity, upward reach, and strength of a person's ties with regard to a given hierarchy – the three elements we have defined as making up the core of political ties.

Several recent applications of the position generator approach helped inform the current work. The 2017 wave of the International Social Survey Programme (ISSP), which included China, asked participants whether they knew a journalist, lawyer, and/or police officer – thus addressing a number of both state and non-state political positions – as part of a broader 20-item position generator measure (Sapin et al., 2020). Focusing more narrowly on state positions in the Chinese context, Bian (2008) asked about three categories of state officials (government cadres, Communist Party cadres, and cadres of legal offices) in his event-based position generator that took respondents' visitors during the Spring Festival (Lunar New Year) celebrations as a sampling frame. However, both surveys remain within Lin and Dumin's (1986) original occupational prestige framework, with political positions viewed as simply one type of relevant

occupation; thus, these three-item measures provide an incomplete picture of potentially valuable *political* connections as they do not capture the full range of diverse political institutions and upward reach to the power centers of decision-making within the Chinese administrative institutional hierarchy. Instead, these existing variants of the social position generator were intended to gain insights into Chinese society in general or in comparative perspective and are appropriate for this purpose. However, they do not ask about politically-relevant social positions in enough detail to capture the full breadth and depth of Chinese residents' political connections, which is needed to advance understandings of Chinese politics and development.

However, while existing position generators that have been applied in the Chinese context are not sufficiently comprehensive to assess the full spectrum of political ties, such position generators are able to overcome a number of the shortcomings of ordinal measures and name generators. Asking people to directly rate the upward reach, diversity or strength of their political ties on an ordinal scale is likely to induce significant measurement error, as perceptions of what each category means are likely to differ greatly (Marsden, 1990). By contrast, position generators allow researchers to calculate the diversity, upward reach, and strength of respondents' ties in a standardized way. Position generators can still fall prey to measurement error stemming from differences in respondents' understandings of what it means to "know" a person, but this can be reduced by providing a standard definition for participants.

Compared to name generators, the lack of a requirement to "name names" in position generators should help to reduce non-response, and indeed, response rates to social position generator questions are generally quite high (Lin and Erickson, 2008). Moreover, the risk of biased measures of diversity or upward reach due to respondent forgetting or satisficing should be lower in a position generator than a name generator, as the former prompts respondents to think about whether they have contact with people in a group of systematically selected positions

rather than simply list any ties that come to mind after a more general prompt. Indeed, Fu (2008) found position generators to be an incredibly accurate reflection of respondents' actual contact networks in his comparison of responses on a position generator to diary data on people's interactions over a three to four-month period.

Data & Methods

The Political Position Generator

We therefore propose a new measure of individuals' political ties drawing on the position generator framework—the political position generator. The full text of the instrument can be found in Table 1. The measure has 18 items and begins by asking whether respondents have contact with anyone in four representative positions within the Chinese party-state apparatus (party or government cadre, public security cadre, member of the Chinese People's Political Consultative Conference [CPPCC], or People's Congress representative), the military, and three positions frequently considered semi-official or more loosely connected to the political system (journalists, lawyers, and members of social organizations). Although many media are now primarily financed by advertising and investment, they are still considered a political institution and not a watchdog in China (Stockmann, 2013). Similarly, there is a debate about the extent to which actors in the Chinese judicial system are independent (Liebman, 2007; Liu and Halliday, 2011; Solomon Jr, 2010). Social organizations in China must be registered with the state but fall into different categories depending on the extent to which they are financed and managed by state institutions (Hildebrandt, 2013; Hsu and Hasmath, 2014).

These eight positions were selected with the aim of covering a wide range of politically-relevant areas in China in order to more fully capture respondents' *network diversity* than Bian's (2008) more limited three-item measure. To reduce measurement error caused by differing

definitions of what it means to “know” a person, we explicitly defined the types of relationships in which we were interested in the questionnaire instructions in the following way, building upon previous position generator scales (cf. Lin and Erickson, 2008): “These people can be those who you have contact with in real life, including your family members, relatives, friends, or someone else you know, while they can also be online friends who you interact with online. By knowing a person, we mean that you know him/her by name and well enough to contact him/her”. In this way, we sought to reduce the risk that respondents would indicate “knowing” a person simply because their name was familiar to them from media reports. However, unlike in a name generator, respondents were not asked to actually provide the names of their contacts in order to reduce sensitivity and privacy concerns.

Lin and Dumin’s (1986) social position generator encompasses items for occupations at different positions on a hierarchy of occupational prestige, which allows them to measure network diversity and upper reachability simultaneously by analyzing respondents’ answers to specific items. However, no such hierarchy of prestige exists for the realm of politics. A tie to a public security cadre is no more or less prestigious than a tie to a member of CPPCC; instead, having ties in both places (regardless of rank) is indicative of one’s network diversity, while upper reachability is represented by the rank of one’s tie within each respective administrative hierarchy. Thus, we decided to measure these two dimensions with two follow-up questions in which respondents who indicate having contact with someone in one of the four party-state positions are asked first about the highest level at which they know someone (tie rank) and then how close they are to this person (tie strength). The former has five answer choices corresponding to a tie at the central, provincial, municipal, county/district, or town level (and thus in decreasing order of rank); while the latter has four answer choices referring to an immediate family member, other relative, close friend, or acquaintance (and thus in decreasing order of

strength). Our decision to consider non-immediate family members stronger ties than friends was based on our understanding of Chinese social networks, which place strong emphasis on familial and quasi-familial bonds (Bian and Ikeda, 2018). In instances where respondents had contact with more than one person in a given position, they were first asked to select the person they believed had the highest rank; they were only instructed to think about the person with whom they had the closest relationship if they knew multiple people at the same highest rank.

A different format was followed for the three semi-official positions of lawyer, journalist, and member of a social organization, as well as the military, where the same hierarchy of rank cannot be easily applied. Unlike the party-state hierarchy, China's military hierarchy can be quite opaque to those outside of it, while the three semi-official positions are less hierarchical by nature. For this reason, we did not ask about the ranks of respondents' semi-official ties, and proceeded directly to the follow-up question concerning tie strength, in which respondents were asked to indicate whether their tie was an immediate family member, other relative, close friend, or acquaintance. If they knew multiple people holding a given position, they were asked to indicate their relationship to the person with whom they felt closest.

The political position generator items were piloted in a face-to-face pretest survey with 306 participants conducted from mid-January to mid-February 2017 by experienced and trained interviewers affiliated with a research center at a Chinese university.²

Validation Data

The final version of the political position generator was tested and validated with data from the 2018 China Internet Survey, which was conducted from July to September 2018 via face-to-face conversations with experienced and trained interviewers affiliated with the same Chinese

² The pretest scale differed from the final political position generator scale in the following ways: "trade union cadre" was included instead of "lawyer", ties to CPPCC members were considered at the national level only, and the follow-up questions on tie strength and tie rank for official ties were presented in reverse order.

university research center that conducted the pretest. The population of interest consisted of Chinese residents from 18 to 65 years of age. The survey made use of iterative spatial sampling via global positioning system (GPS) in order to appropriately capture the large numbers of internal migrants who are not officially registered at their place of residence, a major source of bias in other surveys in China (for more information, see Landry and Shen, 2005). Urban residents were purposely oversampled to achieve a ratio of urban to rural respondents of 2:1 in the sample. A total of 4686 eligible samples were drawn, yielding a final sample size of 3,144. The response rate was 67.1%. The survey took 44 minutes to complete on average. Participants' responses were recorded via paper-and-pencil. In order to obtain a representative sample of the working-age Chinese population, survey weights were calculated based on age, gender, and education information from China's Sixth National Population Census, conducted in 2010 (Office of the 6th Chinese Census under the State Council [OCCSC], 2010).

Results

Item-Level Descriptive Statistics

Table 1 provides information on the distribution of responses to each of the political position generator items. Survey weights (described above) were used when calculating the percentage of respondents selecting each answer option to control for the fact that not all respondents had an equal chance of being selected for the survey. Item-level correlations for all items can be found in Tables S1, S2, and S3 in the Supplementary Material.

As can be seen in Table 1, the percentage of respondents indicating a tie to a given position ranged from 3.31% (social organization) to 17.5% (party or government cadre). A total of 31.8% of respondents reported at least one political tie. Less than 1% of respondents were

unable or unwilling to state whether they knew someone in each position, confirming the measure's clarity and lack of political sensitivity.

For purposes of comparison, while population-level figures on the number of people in each of these positions are not available, China's Sixth National Population Census in 2010 indicated that roughly 1.2% of the Chinese population above age 16 worked for various levels of government, party organizations, mass organizations, or in management positions at state enterprises or institutions (OCCSC, 2010). This category of employment encompasses the four positions in the party-state apparatus included in our measure (party or government cadre, public security cadre, CPPCC, and People's Congress) as well as functionaries of social organizations and of the People's Courts and People's Procuratorate, and thus a large number of state-affiliated lawyers as well (Ministry of Human Resources and Social Security, 2019). By comparison, our survey indicated that approximately 27.56% of the Chinese population personally knew someone in these six positions. In addition, the 2010 Census handbook indicated that 2.3 million people currently on active military duty were not counted (OCCSC, 2010). This corresponds to approximately 0.17% of the total Chinese population including active duty servicemembers. By comparison, our survey indicated that roughly 7.65% of the Chinese population personally knew someone in the military. Hence, as expected, a larger percentage of respondents knew someone in the larger group of party-state officials and semi-official positions than in the smaller group of active military servicemembers.

Turning to the follow-up question on tie strength, it can be seen in Table 1 that for seven out of eight positions, having an immediate family member was the least common answer option selected, with responses ranging from 1.15% (social organization) to 16.68% (military). Non-immediate family members accounted for between 6.56% (People's Congress) and 28.96%

(military) of respondents' ties, and thus represented the second-least common response for all positions except the military. Acquaintances accounted for between 14.39% (journalist) and 45.32% (party or government cadre) of respondents' ties; they were the most frequently selected response for two positions (party or government cadre and People's Congress representative), and the second most frequently selected response for all other positions except the military. Finally, between 30.11% (party or government cadre) and 55.13% (journalist) of respondents indicated having a friend in a given position, making it the most frequently selected response for all but two positions. Hence, the data broadly confirms Granovetter's (1973) notion of the "strength of weak ties", as respondents were more likely to have a weak tie in an official or semi-official political position than a strong tie.

Information on tie rank, and thus upper reachability within the relevant occupational hierarchy, was only available for the four positions within the party-state apparatus. For all four positions, the lion's share of respondents knew a person at the town or county/district level, with the combined share ranging from 77.57% for public security cadres to 85.73% for People's Congress Representative. The town level was the most frequently selected response for two of the four positions (party or government cadre and People's Congress representative), while the county/district level was most frequently selected for the other two positions. From there, response frequencies declined as hierarchical position rose: the percentage of respondents knowing someone at the municipal level ranged from 17.32% (public security) to 6.56% (People's Congress); from 3.41% (People's Congress and CPPCC) to 2.59% (public security) at the provincial level; and from 0% (public security) to 2.54% (CPPCC) at the central level. Thus, the distribution of the upper reachability of respondents' networks was mostly in alignment with expectations.

Construction of the Network Diversity Measure

We first analyzed the binary variables on having vs. not having a tie in each of the eight positions in order to calculate the network diversity of respondents' political ties. Cronbach's alpha for the eight binary items was 0.70, thus meeting the commonly accepted cut-off score for acceptable internal scale consistency (Tavakol and Dennick, 2011). This provided a first indication of the appropriateness of a unidimensional political ties diversity scale based on all eight items.

We next conducted several analyses based on item response theory (Embretson and Reise, 2000; van der Linden and Hambleton, 1997) to determine whether or not to reduce the number of items in the scale. Figure S1 in the Supplementary Material shows the item characteristic curves and item information functions for the eight items, which served as a basis for evaluating the items' difficulty and discrimination parameters. Neither the item difficulty nor item discrimination parameters suggested eliminating any items. Hence, we included all eight binary political position generator items in scale construction.

We then conducted multiple correspondence analysis (MCA) to assess the items' dimensional structure and construct a political ties diversity scale. MCA is a subtype of principal component analysis (PCA) suitable for analyzing categorical or binary data because it treats each answer category (here: presence or absence of tie) as a separate input with a unique predictive value (Greenacre and Blasius, 2006). Like PCA, it is used to generate one or more latent unobserved variables that account for maximal variance in a set of observed variables. MCA has a long history of use in measuring social capital (cf. Bourdieu, 1984). In political science, MCA has been used in recent years to construct latent measures of, for example, Belgian youth's social capital (Teney and Hanquinet, 2012), American voters' political competence (Laurison, 2012), and Sicilian townspeople's political involvement (Gozzo and D'Agata, 2010) on the basis of

binary or categorical manifest indicators. Thus, we decided that it would be an appropriate method for creating a latent network diversity variable on the basis of the eight observed binary variables from the political position generator.

Table S4 in the Supplementary Material reports the MCA results with respect to the dimensional structure of the data. As shown in the table, the first dimension already accounted for 89% of the variance in the data, confirming the appropriateness of the unidimensional scale. All individual items loaded onto the global indicator in the same direction; thus, the requirement of global first axis ordering consistency necessary for creating a composite scale (Asselin and Anh, 2008) was fulfilled. In the original analysis, scores of 0 on each manifest variable (indicating the absence of a tie) clustered near 0, while scores of 1 on each manifest variable (indicating the presence of a tie) were given negative values whose magnitude corresponded to their usefulness in explaining the variance in the overall indicator. These values were reverse-coded in the final scale created on the basis of the MCA results. Thus, on the political ties diversity index we created, higher values indicate greater political capital in the form of personal connections to people in a diverse set of politically-relevant positions, while lower values indicate less political capital. Respondents who refused to answer six or more political position generator items were given missing values on the political ties diversity index. This corresponded to 0.29% of the unweighted sample. Finally, for easier interpretability and in line with previous work (e.g., Asselin and Anh, 2008; Ezrari and Verme, 2013), the index was then zero-anchored so that the person with the lowest score on the scale had a value of 0. This was done by adding this respondent's score (which had a small negative value) to the scores of all respondents.

Construction of the Upper Reachability Measure

To measure the upper reachability of the respondents' political ties, we gave each respondent a score corresponding to the highest rank at which they knew someone in one of the four official party-state positions for which we asked the follow-up question about tie rank. Due to the small number of respondents who had ties to officials at the central and provincial levels, we combined these two highest levels when creating the upper reachability measure. Hence, respondents who knew a party or government cadre, public security cadre, People's Congress representative, and/or CPPCC member at the central or provincial level were given a score of 4; respondents who knew at least one of these officials at the municipal level were given a score of 3; and so on. Respondents who did not know any of these officials were given a score of 0 on the upper reachability measure, and respondents who refused to answer three or four of the corresponding political position generator items were coded as missing. This affected 0.45% of the unweighted sample.

Construction of the Tie Strength Measure

Similarly to the upper reachability measure, we measured respondents' tie strength by giving them a score corresponding to their closest bond on any of the eight political position generator items. Respondents who reported at least one immediate family member in a political position were given a score of 4; respondents with at least one more distant relative were given a score of 3; respondents with at least one friend were given a score of 2; respondents with at least one acquaintance were given a score of 1; and respondents with no political ties at all were given a score of zero. Just as with the diversity index, respondents who refused to answer six or more political position generator items were given missing values on the tie strength measure; this again affected 0.29% of the unweighted sample.

Table 2 provides descriptive statistics and correlations for all three political ties measures. Despite the relatively strong correlations among the three newly-constructed measures (all r s > 0.64), we elected not to combine them into a single index due to our theoretical understanding of political ties as encompassing the three distinct dimensions of network diversity, upper reachability, and tie strength. The strong empirical correlations among the measures in our sample are likely to result from the fact that roughly 70% of respondents indicated no political ties and thus received scores of 0 on all three measures. They are also in line with previous work finding substantial correlations between network diversity and upper reachability in individuals' social networks more generally (Bian, 2008; van der Gaag et al., 2008).

Criterion-related validity

According to Drost (2011, p. 118), criterion-related validity refers to the “degree of correspondence between a test measure and one or more external referents (criteria), usually measured by their correlation”. Criterion-related validity has several subdimensions reflecting different types of potential relationships to external referents. In the validation with CIS data, we were able to test the political position generator's discriminant validity and concurrent validity.

Discriminant validity refers to the “divergence between measures and manipulations of related but conceptually distinct ‘things’” (Drost, 2011, p. 119). In other words, the instrument must measure a unique construct, and not merely be a pure reflection of other, related constructs. Hence, to test the discriminant validity of our three-newly constructed political ties measures, we examined their associations with three sets of related, yet conceptually distinct variables in multivariate regression models: demographic information (age, gender, education, ethnicity, migrant worker status, urban vs. rural residence, and wealth); other social network variables (online social network size and tie with someone living abroad); and the respondents' own

position within the party-state apparatus (party membership, employment as a party-state official). Full information on the operationalization of each variable can be found in the Supplementary Material.

Table 3 reports the multivariate regression results. As all independent variables were converted into 0-1 scales, the size of the regression coefficients provide a direct comparison of the relative strength of the associations with political ties. As shown in Table 3, the strongest and most consistent positive associations with political ties were found for the variables capturing the respondent's own political position (CCP member, official), the respondent's broader social network (online network size, tie to a person living abroad), and wealth. These results suggest that Communist Party membership, membership in the social elite, and an official party-state position provide significant opportunities for further political networking. Moreover, they demonstrate that individuals with larger and more diverse social networks are more likely to have political ties as well.

In contrast, Table 3 shows only weaker and less consistent associations between the political ties measures and the other demographic measures. For example, a significant, non-linear effect of age was only found for tie strength, while a significant negative effect of Han Chinese ethnicity was only found for upper reachability.³ These results must be interpreted with caution due to their lack of robustness across the three dimensions of political ties.

All in all, the three sets of variables combined explained 16% of the overall variance in tie strength, 20% of the overall variance in upper reachability, and 27% of the overall variance in network diversity (R-squared values in Table 3). Thus, while the results indicate some degree of

³ Negative correlation for Han Chinese are difficult to interpret because our survey did not distinguish among different minority groups in order to protect respondents' privacy given our geographic sampling strategy. Thus, we have no way of knowing whether strong political ties among certain minority groups might be driving the results.

overlap between our political ties measure and theoretically distinct, yet empirically related constructs, we can be confident that our measures provide added value over and above these constructs. The political position generator's discriminant validity can be confirmed.

Next, we tested the political ties measures for concurrent validity, which refers to “the ability of a test to predict an event in the present” (Drost, 2011, p. 118). Specifically, we evaluated the associations between our measure and political outcomes of interest: measures of political participation (contentious, non-contentious, total) and political attitudes (political interest, political fear, internal political efficacy, external political efficacy, and trust in the central government). As political participation in authoritarian regimes is a complex construct, with differences according to whether or not the participatory action under study is contentious or non-contentious, high-effort or low-effort, concerning sensitive or non-sensitive topics – to name just a few – a full regression analysis of the complex associations between political ties and participation would be beyond the scope of this validation study. Instead, we created a broad nine-item index of various participatory actions respondents might take in response to a policy problem in their local area, and then further divided into variable into contentious and non-contentious actions to provide an initial, broad confirmation of the political ties measures' concurrent validity. Full information on the operationalization of each variable can again be found in the Supplementary Material.

The correlations between the political ties measures and political participation and attitudinal variables are reported in Table 4. Point-biserial correlations were calculated for categorical variables, and Pearson's product-moment correlations were calculated for continuous variables. For easier interpretation, Cohen's *d* effect sizes of group mean differences are also reported in the footnote of Table 4 for the dichotomous variable political fear. As shown in the

table, the strongest correlations were found for total participation (all $r_s > 0.2232$), non-contentious participation (all $r_s > 0.1998$), contentious participation (all $r_s > 0.1603$), and political interest ($r_s > 0.1648$). These results provide initial confirmation of the political position generator's usefulness for predicting key outcomes of interest to researchers working on citizens' political participation in China. Conversely, only weak correlations between the political ties measures and political fear, internal and external political efficacy, and trust in the central government were found (all $r_s < 0.12$), suggesting that the political position generator is of more limited usefulness for predicting these attitudinal variables.

Finally, in an exploratory analysis, we tested for significant differences in the correlations between the three political ties measures and the political attitude and participation variables. The results are reported as stars in Table 4. The network diversity index exhibited significantly stronger correlations with total participation, non-contentious participation, and political interest than at least one of the other political ties measures; all other differences were non-significant. These results, combined with the substantial correlations among the three political ties measures (see Table 4), provide a first indication that the network diversity index accurately captures the most relevant aspects of the political ties construct as it relates to political outcomes of interest. Hence, applied researchers interested in employing a reduced version of the political position generator might wish to consider asking only about the presence of each tie, and eliminating the follow-up questions about tie rank and strength. This would reduce the length of the political position generator from 18 to 8 items.

Conclusion

This study makes an important contribution to the study of political ties by introducing a new multidimensional measurement instrument rooted in the social capital framework, and

specifically in the well-established position generator approach (Lin and Dumin, 1986). While previous research on Chinese politics and development has tended to rely on qualitative case studies or simple one-item measures, our 18-item political position generator is able to adequately measure three distinct dimensions of respondents' political ties discussed in the social capital literature: network diversity, upper reachability, and tie strength. These dimensions address a wide variety of diverse political institutions in China and allow researchers to detect a person's reach to the power-centers of decision-making within China's administrative institutional hierarchy. Furthermore, we were able to validate our measure's discriminant and concurrent validity with a representative survey of the Chinese population. In terms of discriminant validity, demographic, social network, and own political position variables explained only at most one-quarter of the overall variance in the political ties scales, indicating the measure's value above and beyond these related constructs. Nevertheless, the strong and consistent positive correlations found between respondents' own political position and their political ties are in line with prior research on the benefits of party-state positions in China (e.g., Li et al., 2012; Zhou, 2009; Appleton et al., 2009; Dickson, 2014) as well as more general research on the Matthew effect within social networks (i.e., those with initial advantages tend to accrue even more advantages, see Scott and Carrington, 2011; Perc, 2014). Similarly, the finding that political ties are more likely among individuals with larger and more diverse social networks serves as important confirmation of our theoretical perspective that political ties represent a specific type of bridging tie between state and non-state actors that can be appropriately analyzed from a social networks perspective (see Mladovsky and Mossialos, 2008; Woolcock, 1998).

In terms of concurrent validity, we found substantial correlations between the political ties scales and various forms of political participation as well as political interest, providing an indication of the construct's relevance in explaining these important political outcomes.

Moreover, the positive correlations with non-contentious participation were stronger than the correlations with contentious participation, lending support to Tsai and Xu's (2018) argument that political ties provide citizens with important information on what types of political activities will be tolerated by the state and which will result in repression.

However, in addition to these strengths, this study has several limitations that must be acknowledged. Specifically, due to the cross-sectional nature of our data and limitations on the number of survey questions we could ask, we were unable to test the political position generator's test-retest reliability or predictive validity. These tests should be conducted in future research. To examine test-retest reliability, respondents could be asked to complete the political position generator multiple times over a short period of time (e.g., several weeks, short enough to rule out the possibility of substantial changes in participants' actual networks) and the results could be compared. Secondly, building upon the initial evidence of concurrent validity presented here, future studies could undertake more detailed regression analyses to investigate the differential impact of the political ties measures on different forms of participation in authoritarian regimes, attempt to tease out the underlying mechanisms, or examine the political position generator's predictive validity (cf. Drost, 2011) by employing longitudinal approaches. Specifically, given the substantial correlations found between the political ties measures and political participation, future research could examine whether political ties at Time 1 are predictive of political participation at Time 2, and whether the effects differ for contentious vs. non-contentious participation and for the different dimensions of political ties. In addition to confirming the validity of the political position generator, such results could further our understanding of political participation by clarifying the mechanisms through which political ties encourage citizens' participation. Beyond China, the political position generator is likely to be most useful in the context of other one-party regimes, such as Ethiopia, Mozambique, Tanzania,

and Zimbabwe (Brownlee, 2007; Geddes, 1999) due to the hierarchical structure of the political system in such regimes as well as their tendency to build an extensive institutional infrastructure (Gandhi, 2008; Magaloni, 2006; Stockmann, 2013). It could also prove fruitful in other societies in which politically-connected intermediaries play a key role in state-society relations, such as India (e.g. Krishna, 2011; Ruud, 2000) or the Arab world (e.g. Hutchings and Weir, 2006; Kropf and Newbury-Smith, 2016; Lackner, 2016).

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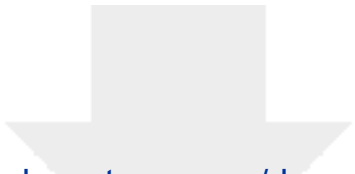
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