

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/284685763>

Bringing strong ties back in: Indirect connection, bridges, and job search in China

Article in *American Sociological Review* · January 1997

CITATIONS

61

READS

404

1 author:



Yanjie Bian

University of Minnesota Twin Cities

84 PUBLICATIONS 3,816 CITATIONS

SEE PROFILE

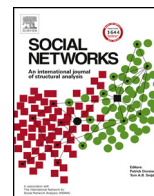
Some of the authors of this publication are also working on these related projects:



Gender in China [View project](#)



guanxi [View project](#)



Information and favoritism: The network effect on wage income in China



Yanjie Bian^{a,c,*}, Xianbi Huang^b, Lei Zhang^c

^a The Institute of Empirical Social Sciences Research, Xi'an Jiaotong University, No. 28, Xianning West Road, Xi'an, Shaanxi 710049, China

^b School of Social Sciences and Communications, La Trobe University, Melbourne, Victoria 3086, Australia

^c Department of Sociology, University of Minnesota, 267 19th Avenue South, Minneapolis, MN 55455, United States

ARTICLE INFO

Keywords:
Information
Favoritism
Networks
Income
China

ABSTRACT

How do social networks matter for labor market opportunities and outcomes? To fill in a gap between network theory and research evidence, we develop a theoretical explanation of how network-transmitted information and favoritism serve as causal mechanisms of wage income in China. In a large-scale Chinese survey, we find that 59% of the 4350 wage earners land on jobs through social contacts from whom the benefits of information and forms of favoritism are gained. Data analysis shows that (1) both weak ties and strong ties are used by Chinese job seekers to obtain information and favoritism to help secure job opportunities, but (2) weak ties are better able to channel job information than strong ties and strong ties are better able to mobilize forms of favoritism than weak ties, (3) information and favoritism equally promote job–worker matching, which in turn increases wage, and (4) favoritism has a stronger effect than does information on job assignment to positions of superior earning opportunity. This analysis demonstrates the non-spurious, causal effect of social networks on wage income in the Chinese context.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

Despite accumulated empirical studies, there remains a gap between theory and research evidence on how social networks may or may not matter for wage income. Under the assumption of imperfect labor markets, variants of network theory (Granovetter, 1973; Lin, 1982; Podolny, 1993; Bian, 1997) argue that the information and influence that are obtained from social contacts will help job seekers secure work of higher status or higher pay. Except for an economics study (Corcoran et al., 1980) and a Chinese survey (Bian and Huang, 2009), however, no sociologists have measured information or influence that is thought to affect job prestige or wage income; instead, they measure the strength of ties between job seekers and social contacts, as well as their characteristics, as proxies to information and influence (see reviews by Granovetter, 1995; Lin, 1999). The problem is that these proxies neither lend consistent results (Bridges and Villemez, 1986; De Graaf and Flap,

1988; Marsden and Hurlbert, 1988) nor survive the test using experimental data (Montgomery, 1992). Because social contacts are homogeneous to one another in personal attributes, argues Mouw (2003: p. 869), the nonrandom acquisition of friendships and other social ties ensures “a positive correlation of friends’ income and occupational status *even in the absence of a causal effect*” (italic added). Mouw’s carefully crafted analysis of several relevant datasets shows that the widely claimed “network effect” on wage income may, after all, be spurious.

This is a serious challenge to an otherwise established network research tradition. In this article, we develop a theoretical model of the network effect on wage income and examine some empirical implications of this model by drawing on evidence from a probability sample of wage earners in urban China. We argue that network-transmitted information and influence that are gained from social contacts during an individual’s job search will have lasting effects on wage income of a landed job career. While network information reduces uncertainties on both prospective employees and employers and thus increases job–worker matching and wage, network influence, in the form of favoritism in the Chinese context and elsewhere, increases the propensity that an individual is assigned to positions of superior earning opportunity and gets high pay. We elaborate this argument before proposing hypotheses to guide our data analysis.

* Corresponding author at: Department of Sociology, University of Minnesota, 267 19th Avenue South, Minneapolis, MN 55455, United States. Tel.: +1 651 784 7689; fax: +1 612 624 7020.

E-mail addresses: yjbian@mail.xjtu.edu.cn, bianx001@umn.edu (Y. Bian), x.huang@latrobe.edu.au (X. Huang), zhang700@umn.edu (L. Zhang).

2. Explaining the network effect on wage income: a theoretical model

In a microeconomics perspective, wage is a function of worker productivity, and market equilibrium wages are provided to workers whose qualifications match the expected productivities of the jobs (Javanovic, 1979). Researchers have identified two problems about this neoclassic economic view. First, productivity is unobservable potential of a worker and imperfect information about it exists especially at entry levels of a job career. Therefore, personal networks, among other mechanisms (Stigler, 1961; Akerlof, 1970), will matter when social contacts provide information about prospective workers, who subsequently receive an optimal job assignment and a good pay (Granovetter, 1981). Second, employers may prefer to offer someone a higher-than-market-reservation wage for reasons unrelated to productivity (Simon and Warner, 1992). In other words, favoritism emerges when employers are satisfied with referrals from either entrusted employees (Corcoran et al., 1980) or influential social contacts of the “old-boy networks” (Rees, 1966; Prendergast and Topel, 1996). While both information and favoritism are the resources that flow through the networks of job seekers, they are mobilized through different kinds of social ties.

Information is likely to flow through weak ties. Granovetter (1973) is among the very first to theorize the role of personal networks in flowing labor market information. His “strength of weak ties” hypothesis points to a tendency that weak ties of infrequent interaction or low intimacy are more likely than strong ties to channel non-redundant information across social circles, thus permitting a wider search for a variety of employment opportunities from which a job of higher status or higher pay can be secured. Lin (1982) advances this line of reasoning by arguing that weak ties tend to connect to high-status contacts, whose information about better jobs will pay off for job seekers who obtain jobs through networks of weak ties. In Podolny’s (1993, 1994) reconceptualization, a social contact’s high status confers a positive evaluation of the quality of the job seeker and in such a way serves as a market signal about productive capacity of the new hire. While small-scale empirical studies have established the positive correlations between weak ties and social contacts’ statuses, and between social contacts’ statuses and job-search outcomes (Granovetter, 1974; Lin et al., 1981; Boxman et al., 1991; Coverdill, 1998), these correlations did not survive more rigorous tests using general-population samples (Bridges and Villemez, 1986; De Graaf and Flap, 1988; Marsden and Hurlbert, 1988; Mouw, 2003). In none of these studies, however, information was measured; and the “weak tie-information” link was merely assumed.

Favoritism is another kind of resources that are likely to flow through social ties, strong or weak. While “in-group favoritism” is common among relatives and close friends who expect preferential treatments to each other (Taylor and Doria, 1981), it is also widely observed in the workplace (Prendergast and Topel, 1996). Favoritism emerges when employers accept referrals from employees (Saloner, 1985; Simon and Warner, 1992) or when hiring decisions are influenced by relatives, personal friends, or referrers of high power (Rees, 1966). In the Chinese context, obligations to give or return a favor to someone in need of a job have been prevailing before and after the post-1980 market reforms (Bian, 1994, 1997, 2002, 2008; Bian and Huang, 2009). In imperfect labor markets in China or elsewhere, job assignments and wage offers are oftentimes flexible, and this flexibility creates a social space in which favoritism could operate to influence hiring decisions. While this is the so-called dark side of social capital about unjust access to scarce resources that are distributed as favors through old-boy networks (Portes, 1998), the social tie-favoritism link has not been analyzed in previous labor market studies.

Fig. 1 depicts a causal model about direct and indirect network effects on wage income. The left hand side of the model indicates that a job-seeker’s egocentric network contains both weak ties and strong ties, through which to transmit two kinds of network-embedded resources, information and favoritism. These resources can be mobilized from both weak ties and strong ties, although weak ties may be more frequently to flow non-redundant information about job openings than strong ties and strong ties may be more frequently and more effectively to mobilize favoritism than weak ties. The rest of the model is about the ways in which information and favoritism affect wage income directly and indirectly.

There are several reasons to believe that network-embedded information directly affects wage income. First, weak ties lead to non-redundant information about job openings, which allow for a wider search from which a job of higher pay can be landed (Granovetter, 1974, 1981). Second, employee referrals, which can be obtained through both weak ties and strong ties, contain sufficient information about the qualifications of job seekers, and such information reduces the costs of otherwise a more expansive, formal search, making employers willing to throw the savings into attractive offers to secure best qualified candidates (Corcoran et al., 1980; Fernandez and Weinberg, 1997; Fernandez and Castilla, 2001). Third, inside social contacts of varying tie strengths disclose information about prior hires’ offers and help the job seekers negotiate for higher starting wages (Seidel et al., 2000); because of lacking this sort of information, minority candidates take lower pay (Smith, 2000). Finally, rich insider information about employing organizations, which is made more available through strong ties than weak ties, is found to increase new hires’ abilities to learn quickly in a socially adapted environment, leading to higher salaries of new jobs (Coverdill, 1998; Rosenbaum et al., 1999). Thus, we graph a positive, direct path from network-embedded information to wage income in the upper part of Fig. 1. This path is marked by a dotted line to denote that the direct effect of network information can be weak in China or elsewhere.

The more discussed role of network information in affecting wage income is through job-worker matching. In a perfect labor market, equilibrium wage is provided to workers whose productive capacities match the requirements of the jobs. In reality, however, the problem of information asymmetry exists for both employers and employees about the exact wage level or location of one’s optional assignment (Javanovic, 1979). “Assortative matching” is a labor market response to this problem: while firms differ in tasks and workers differ in their abilities to do these tasks, person-specific information is welcomed and used to sort out workers and match a job’s required tasks to a worker’s ability to do the job (MacDonald, 1980). This person-specific information, though partly available through schools and other institutional channels (Rosenbaum et al., 1999), almost always comes from the networks of social contacts (Saloner, 1985). When employee referrers transmit this information to employers, better job-worker matching is expected, and higher starting salaries and longer stay on the job are the observed consequences of referred workers (Simon and Warner, 1992). In the upper part of Fig. 1, we draw an indirect path from network information to job-worker matching and to wage income. This indirect path is marked by a solid line to denote that the indirect effect of network information on wage income through job-worker matching is strong in China or elsewhere.

Information is not the only mechanism whereby networks of social contacts matter for wage income. Rather, favoritism is probably a parallel process of network influence in the workplace (Prendergast and Topel, 1996). Thus, the lower part of Fig. 1 depicts both the direct and indirect paths from network-embedded favoritism to wage income. The reasoning behind the direct path should be well taken: high wages are offered as personal favors to family members, relatives, or close friends. This scenario is not

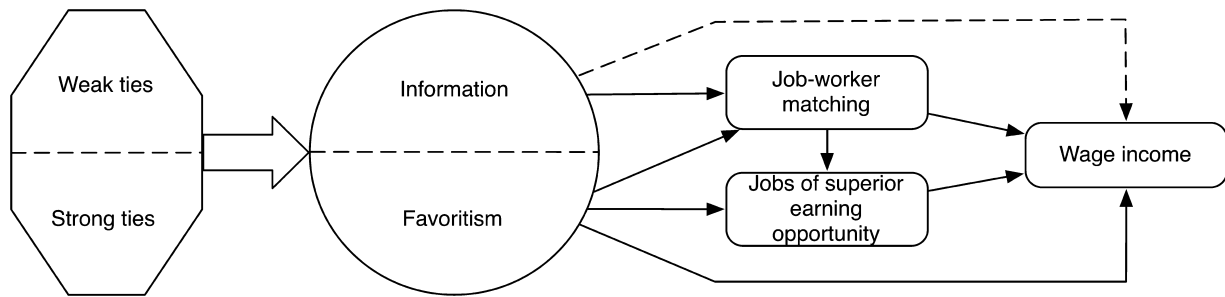


Fig. 1. A causal model of the network effect on wage income.

just happening in China; it is also observed in American firms in which “marginally qualified” applicants get good jobs as the result of influential recommendations from friends or relatives (Coverdill, 1998). In a 10-year study of post-high school hires, Rosenbaum et al. (1999) find that those who are referred by relatives to their own employers have higher starting salaries than those who are referred by friends. The direct path from network favoritism to wage income is marked by a solid line to denote a strong direct effect of favoritism.

In the lower part of Fig. 1, we depict two indirect paths from network favoritism to wage income, both marked by solid lines to denote the strong indirect effects of favoritism on wage income in the Chinese context. One indirect path is through job–worker matching. This is implied in the practice of favoritism in the workplace: among multiple candidates those who are favored will be taken care of before anyone else get matched to a job (Saloner, 1985; Coverdill, 1998). This means that favorable referrals from influential social contacts increase the job–worker matching. The other indirect path is through assignments to positions of superior earning opportunities. While a favored job seeker may match his/her qualifications to the requirements of an assigned job, he/she may also get a position of superior earning opportunities. In the Chinese context, for example, these are positions that are in close contact with authorities who decide on salary raises, or positions that are closely connected to market opportunities for extra earnings (Bian and Logan, 1996). In post-communist Hungary and Russia, through social connections state-sector workers make “extra-work-schedule” earnings in the market sector (Borocz and Southworth, 1998; Yakubovich and Kozina, 2000). While job–worker matching increases the probability of assignments to positions of superior earning opportunities (the middle, vertical arrow in Fig. 1), network favoritism, not network information, generates additional benefit of allowing someone to be assigned to positions of superior earning opportunities beyond its role in promoting job–worker matching (no direct path from network information to positions of superior earning opportunity).

3. Research hypotheses

We develop a set of empirical implications of our theoretical model for China. Since 1978, China has been under gradual reform away from a state-redistributive system and Chinese economy has grown squarely (Naughton, 2007). In 1978, the non-state share of the country’s urban employment was near 22%; by 1998, a year before our survey to be analyzed shortly, it surpassed 50% (Nee and Cao, 2004). This trend of marketization and privatization has since continued, and the non-state sector employment exceeded 80% in year 2010 and that percentage will be even higher today.¹

¹ The 1978 and 1998 figures are calculated from Table 5–4 of *China Statistical Yearbook 2006* (National Bureau of Statistics, 2006), and the 2010 figure is calculated from Table 4–2 of *China Statistical Yearbook 2011* (National Bureau of Statistics, 2011).

These numbers reflect a fundamental shift from mandatory job assignments by the state to the legitimization and domination of labor markets, in which free-will individuals search for employment and reemployment opportunities on their own. The role of social networks in job search and job acquisition did not decline but increased. The 2003 Chinese General Social Survey shows that between 1980 and 2002, nationally jobs were allocated increasingly less likely through hierarchical channels and increasingly more likely through market and network channels (Bian, 2008). While the growth of labor markets appears to be network-facilitated in China (Sato, 2003), in this article we ask how job seekers mobilized their social ties to obtain information and favoritism, and how network-transmitted information and favoritism affect wage income of Chinese workers.

3.1. Network access to information and favoritism

Derived from our theoretical model is a hypothesis that social contacts of varying tie strengths are mobilized by Chinese job seekers to obtain information and favoritism in order to secure jobs of good pay. While studies of China’s labor markets generally support this hypothesis (Bian, 2008; Bian and Huang, 2009), the country is well known for its persistent *guanxi* culture of favor exchanges (Hwang, 1987; King, 1994; Yang, 1994; Yan, 1996), where strong ties, rather than weak ties, are frequently used and are effective in facilitating job searches and occupational mobility (Bian, 1994, 1997, 2002; Bian and Ang, 1997; Obukhova, 2012). Thus, we hypothesize that

H1. Job seekers obtain informational assistance and forms of favoritism through both weak ties and strong ties to social contacts, and

H2. Strong ties may be more frequently used than weak ties to obtain favoritism, and weak ties may be more frequently used than strong ties to obtain information.

3.2. Network effects on job assignments

We identify two kinds of variations in job assignments. The first is the variation in job–worker matching, and our theoretical model posits that both network-transmitted information and network-mobilized favoritism are expected to increase job–worker matching. The second is the variation in earning opportunities a job position contains, since some positions contain limited earning opportunities while other positions contain superior earning opportunities. Our theoretical model points out that whereas network information increases job–worker matching, it does not necessarily promote assignment to positions of superior earning opportunities. In contrast, network favoritism not only increases job–worker matching but also helps the specially favored to be assigned to positions of superior earning opportunities. Thus,

H3. Both network information and network favoritism that are gained during one's job search are expected to increase job-worker matching.

H4. Network favoritism, not network information, is expected to have the additional effect on one's assignment to positions of superior earning opportunity.

3.3. Network effects on wage income

Our theoretical model identifies both direct and indirect network effects on wage income. Of direct effects, network information and network favoritism may lead to higher wages. Our substantive discussion of China's *guanxi* culture of favor exchanges leads us to expect that network favoritism is likely to have a stronger direct effect on wage income than network information. Of indirect effects, network information and network favoritism indirectly increase wage income through job-worker matching (both information and favoritism) and assignments to positions of superior earning opportunity (only favoritism). Our final set of hypotheses is as follows:

H5. Both network information and network favoritism that are gained during one's job search have direct positive effect on wage income of one's job career, but network favoritism has a stronger effect than network information.

H6. The higher the degree of job-worker matching, the higher the wage income of one's job career.

H7. The assignments to positions of superior earning opportunities will increase wage income of one's job career.

4. Data and measures

Our data come from a 1999 household survey simultaneously conducted in five Chinese cities (Guangzhou, Xiamen, Shanghai, Tianjin, and Changchun), with a total sample size of 4752 households, or a city-proper sample of 800–1000 households each. Covering a large regional span on the east coast of the Pacific and from the most developed southeast (Guangzhou) to the less developed northeast (Changchun), these five cities are listed above in a descending order of marketization and labor market domination. In our analysis, we have a truncated dataset of the five cities, and we include city dummies to control for intercity variations.

The survey was independently administered in each city but used the same questionnaire and followed the same multistage probability sampling design to take advantage of each city's geo-administrative structure (district, sub-district, and neighborhood). In each randomly selected neighborhood, households of the permanent population were drawn through a systematic sampling technique, based on household registration records contained in the neighborhood organization. In addition, a quota sampling was used to randomly draw a fixed proportion of "migrant labor households" registered as "temporary residents" in the neighborhoods in which they lived. The fixed proportion, close to one fifth with intercity variation, was the ratio of each city's migrant labor to permanent population of the working age, which was estimated from diverse sources of cities' aggregate statistics. From each randomly sampled household, an adult aged 18 or older was selected to be the respondent. Table 1 presents a profile of survey respondents, and we describe the measures of all relevant variables.

4.1. Wage income

This is our ultimate dependent variable, measured by the respondent's average monthly earnings from paid jobs in the year of the survey. Excluding those who did not report a wage income,

due to a homemaker or student status, unemployment without a wage income for more than three months, a long sick-leave for a loss of the lucrative bonus part of a regular pay, or simply a non-reporting, we retain a total of 4350 wage earners. This is the sample we analyze in this study. Of this sample, the average monthly wage is 1015.9 yuan, with a huge standard deviation of 1335.9 yuan, resulting in a coefficient of variation of 1.32 (1335.9/1015.9). Tianjin's coefficient of variation is 1.59 (1293/812), much higher than a 1993 reporting of 0.59 (Bian and Logan, 1996: p. 750). If Tianjin's trend is reflective of China's, then our 5-city data is indicative of dramatically increased inequalities in wage income during the 1990s. In regression analysis that follows shortly, we take a log-transformation of monthly wage to allow for comparisons across years and between cities.

4.2. Network measures

Of the 4350 wage earners, 59% (2566) reported that they received some assistance from at least one social contact during a search that led to the job they had by the survey year, or the job from which to retire. All network measures are confined to these tie users.²

Tie strength refers to the strength of ties between the respondent and his/her social contacts during job searches: it is coded 0 for "no ties" (41.0%) when no contact was used, 1 for "weak ties" (7.7%) when the respondent knew the contact "not at all" or "not well," coded 2 for "stronger ties" (14.7%) when the respondent knew the contact "well," and coded 3 for "strongest ties" (36.6%) when the respondent knew the contact "very well" or "extremely well."³ Unlike findings from western countries (Granovetter, 1995) but consistent with those from China (Bian, 1997), the distribution is toward the stronger end of a strength continuum, with a mean of 2.5 and a standard deviation of 0.7 (excluding no ties and on a 3-point scale).

Measures of *network information* and *network favoritism* come from a list of response categories about different forms of assistance that were received by respondents from social contacts during job searches. The question was: "What kinds of assistances did your contacts provide? The contacts . . ." (1) told me about a job, 28.0%; (2) helped me prepare an application, 9.2%; (3) approached the prospective employer to whom to deliver my application, 10.7%; (4) contacted an authority relevant to the screening of my application, 19.2%; (5) helped to solve concrete problems for the prospective employer prior to the hire, 20.8%; and (6) on an open-ended item, any other forms of substantial help unlisted above, 3.3%. This is a multiple response question, and more than one third of tie users checked two or more given choices. For our analytic purpose, we classify the first and second forms of assistance into a dummy variable under the label of "network information" (35.6%),

² Because the Chinese survey did not collect information on wages at starting and subsequent years of a job career, our analysis is confined to wage earnings at a point of the *most recent job*. This strategy satisfies the assumptions that the network effect, be it in form of information or favoritism, will be at work through the employer: social tie users obtained jobs from the most recent employers under whom to have earned a wage income as reported.

³ This is based on respondents' reporting. In cases of non-reporting, a value assignment is determined with the assistance of specific types of relations to social contacts, which are identified in an open-ended question that was also raised to the respondents. If, for example, the contact is a parent, then tie strength will be coded "strongest" and given a value of 3; if the contact is a parent's colleague, an indirect tie to the respondent, then tie strength will be coded "weak" and given a value of 1. Such value assignments are evaluated and supported by an analysis of consistencies between tie strength and relational types among respondents who provide valid responses to both questions. Although an additional measure of "relational types" can be constructed, we focus our attention entirely on tie strength in order to address relevant issues raised from previous studies.

Table 1
Variables and descriptive statistics, Chinese Five-City Survey, 1999 (N = 4350).

Variables	Mean (S.D.) or %	Variables	Mean (S.D.) or %
<i>Wage income per month</i>		<i>Control variables</i>	
Metric measure in yuan	1015.9 (1335.9)	Gender: % male	53.1
Natural log-transformed measure	6.6 (0.7)	Age	39.2 (12.2)
<i>Network ties</i>		Age ² /100	16.9 (10.3)
% No-tie users	41.0	Years of schooling	11.4 (3.4)
% Tie users in job search	59.0	% Party member	15.8
% Weak ties (coded 1)	7.7	% Employed	75.2
% Stronger ties (coded 2)	14.7	% Migrants	17.9
% Strongest ties (coded 3)	36.6	<i>Occupation</i>	
Tie strength (1–3)	2.5 (0.7)	% Professional	12.1
<i>Network resources</i>		% Managerial	16.4
% Network information gainers	35.6	% Clerical	9.7
“Tell me about a job” (28.0%)		% Manual	61.8
“Help prepare application” (9.2%)		<i>Workplace</i>	
% Network favoritism gainers	44.4	% State sector	67.8
“Deliver my application” (10.7%)		% High rank	62.3
“Contact authorities” (19.2%)		<i>Year of job entry</i>	
“Solve concrete problems” (20.8%)		% Pre-1980	29.5
“Any other substantial help” (3.3%)		% 1980–1992	29.6
<i>Contact status homophily in</i>		% Post-1992	40.9
% Same occupation	7.6	<i>Cities (in descending order of marketization)</i>	
% Same economic sector	29.1	% Guangzhou	15.5
% Same workplace rank	24.2	% Xiamen	21.1
% Job-worker matched	36.7	% Shanghai	22.1
Job’s hierarchical bridging	15.0 (5.0)	% Tianjin	21.7
Job’s market connectedness	7.5 (3.5)	% Changchun	19.6

Measurement details for job’s hierarchical bridging and job’s market connectedness: “How frequent do you have *job-related interactions* with the following people or entities in a typical week? (everyday = 4, a few times a week = 3, once a week = 2, never = 1) (1) customers/patrons; (2) business clients; (3) other business visitors. The sum of the frequencies is used as a scale of “market connectedness”; (4) higher-level colleagues; (5) lower-level colleagues; (6) equal-level colleagues; (7) upper level units; (8) lower level units; (9) other companies. The sum of the frequencies is used as a scale of “hierarchical bridging”.

and the third to the sixth forms into another dummy variable under the label of “network favoritism” (44.4%). Confined to our measurement, 21.0% of the respondents receive dual benefits of information and favoritism, 38% received either, and 41.0% received none.

Our measurement exercise is justified by the theoretical distinction between network information and network favoritism. While the category of “told me about a job” is clearly an informational benefit from a social contact, the action that a social contact takes to have “helped me prepare an application” also entails the benefit of information that the social contact has of the job seeker and/or the prospective employer. Arguably a well-prepared, presumably successful application is partly the result of that informational benefit. In contrast, the actions taken by a social contact to “deliver my application,” “contact an authority,” “solve concrete problems,” or do anything else in “any other form of substantive help” all imply one thing in common: a direct contact between the social contact and an agent of the prospective employer has been socially constructed, and such direct contact is implicitly or explicitly a venue where the social contact can influence the employer on behalf of the job seeker. This influence, if successful, is to convert into forms of favoritism beneficial to the referred job seeker. While in-depth interviews provide vivid stories about how personal networks generate forms of favoritism (Huang, 2008), in this article we examine quantitative patterns of network favoritism effects on wage income.

Informed by previous researchers (Lin, 1982; Lin et al., 1981), we include a few measures of *contact status homophilies* to evaluate a critique that network homophily prevents a real test of the causal effect of contacts on job seekers’ wage income (Mouw, 2003). For this, and relevant to the Chinese context, we construct

three dummy variables that identify, between respondents and social contacts, whether their jobs are within the same (1) occupation (7.6%), (2) economic sector (29.1%), or (3) workplace rank (24.2%). The last of these refers to the level of government office that has jurisdiction or regulative authority over an employer, which has been found to be an important dimension of occupational hierarchy in China (Walder, 1992; Bian, 1994; Bian and Logan, 1996).

4.3. Job-worker matching

To both sociologists (Granovetter, 1981; Fernandez and Castilla, 2001) and economists (Javanovic, 1979; MacDonald, 1980), job-worker matching is considered a critical test of the network effect on labor market opportunities and outcomes. Empirical efforts to measure it in a questionnaire survey in China or elsewhere are rare, however. In our Chinese survey, respondents were asked the following question: “Upon entering the job, how were your prior work skills or trainings compared to the announced requirements of the job by the employer? Would you say, (1) the same, (2) similar, (3) different, or (4) no explicit requirement was announced.” Based on responses to this question, our measure of *job-worker matching* is a dichotomy, being coded 1 for matched (“same” or “similar”) and 0 for not-matched (“different” or “no explicit requirement”) jobs. While subjective and likely containing unknown recall errors, this job-matching variable is the best possible measure we can obtain from the survey. On the whole, 36.7% of the respondents had jobs to which their qualifications were knowingly matched to employer-announced requirements. Taking its face validity, this figure informs us of a labor market far from an equilibrium image of efficiency.

Table 2
Forms of network resources by tie strength.

Tie strength	Number of respondents	(A) Average number of job offers	(B) Average number of contacts	(C) Gaining information (%)	(D) Gaining favoritism (%)	(E) Difference (D) – (C) (%)
Weak	336	1.55	2.73	80.1	56.3	–23.8
Stronger	637	1.50	2.85	66.6	61.4	–5.2
Strongest	1593	1.54	2.75	53.6	84.9	31.3
Total	2566	1.53	2.77	60.3	75.3	15.0
F-test		.709	.131	59.6***	124.0**	
d.f.		2	2	2	2	

Level of significance:

*** $p < .001$.

4.4. Positions of varying earning opportunities

In China's emerging labor market, [Bian and Logan \(1996\)](#) found that a worker's wage income is not merely associated with his/her human capital (education, skill, and experience) and other individual attributes, but the job positions to which one is assigned matter significantly for how much one earns. High earning opportunities are embedded in positions that are in wider connections to different levels of organizational hierarchy (called "hierarchical bridging jobs") in the workplace, and in positions that give occupants a wide range of market connections for extra earning opportunities (called "market connected jobs"). Building on their guidelines, we develop a quantitative scale that sorts out all jobs along the two underlying theoretical dimensions (see the bottom of [Table 1](#) for measurement details). A position varies on the dimension of *hierarchical bridging* when occupants have varying degrees of job-related interactions with six different kinds of colleagues or offices. Out of the six items, the composite 24-point Likert scale of hierarchical bridging has a range of 6–24, resulting in a mean of 15.0 and a standard deviation of 5.0. The measure of *market connectedness* follows the same design but on three items of job-related interactions with customers/patrons, clients, and other business visitors. The composite 12-point Likert scale has a range of 3–12, with a mean of 7.5 and a standard deviation of 3.5.

4.5. Other variables

Relevant to a person's wage income, we measure respondents' gender (53.1% males), age (mean of 39.2), years of schooling (mean of 11.4), membership of the Chinese Communist Party (15.8%), employment status (75.2% currently employed), and being a migrant (17.9%) and use them as statistical controls. Jobs are classified into four categories (12.1% professional, 16.4% managerial, 9.7% clerical, and 61.8% manual) to control for occupation-wage variations. Economic sector is a dichotomy of job locations between the state (67.8%) and non-state (32.2%) sectors. Note that one fourth of the wage earners are retirees by the survey year, and their job's sector location reflects a past situation.⁴ Employers under the jurisdiction of municipal or higher government account for 62.3% of wage earners in the sample; others worked in employers below the municipal level. The year of job entry into the position by the survey year was measured to allow for assessing a possible effect of marketization on access to information and favoritism, and the constructed three periods roughly correspond to the pre- (job entry before 1980, 29.5%), early (1980–1992, 29.6%), and later (post-1992, 40.9%) stages of the reform era.

⁴ When confined to the currently employed, the state share of jobs in our study sample is 62.1%. Judging from the fact that China's state share of urban employment was 41% in 1999 ([National Bureau of Statistics, 2006](#): Table 5–4), our data indicates a stronger state influence in largest Chinese cities, of which our sampled five cities exemplify.

5. Results on network access to information and favoritism

[Table 2](#) presents the distributions of respondents across variables of respondents' tie strengths to social contacts and the network resources that were obtained through these social contacts during job searches for the current/last jobs. Among the 2566 respondents who used social contacts to secure jobs, fewer had weak ties ($N = 336$) and significantly more had stronger (637) and strongest (1593) ties to social contacts. Yet, weak ties, stronger ties, and strongest ties on average generated similar numbers of job offers (Column A, with insignificant F -test) and similar numbers of contacts (Column B, also with an insignificant F -test). Thus, unlike in the West ([Granovetter, 1995](#)), in China weaker ties do not necessarily lead to a wider search than do stronger ties. More importantly, none of the ties, stronger or weaker, were absent when used to obtain information (Column C) or favoritism (Column D). These findings support Hypothesis 1: social ties of varying strengths are used by Chinese job seekers to obtain both informational assistance and forms of favoritism.

Our Hypothesis 2 points to the probability that weak ties and strong ties may have different frequencies of usage for obtaining one kind of network resources over the other. [Table 2](#) presents some supporting evidence for this hypothesis. As shown in Column C, on average a weak tie is 80.1% likely to offer a job seeker informational assistance, a stronger tie is 66.6% likely to do so, and a strongest tie is 53.6% likely to do so; the weaker a tie, the greater the probability to channel information. The significant F -test in this column makes it explicit that weaker ties tend to have a comparative advantage over stronger ties for mobilizing information in the Chinese labor markets.

A reversal is true for favoritism. As shown in Column D, on average a weak tie is 56.3% likely to offer a job seeker some form of favoritism, a stronger tie is 61.4% likely to do so, and a strongest tie is 84.9% likely to do so. Clearly, the significant F -test in this column shows that stronger ties tend to have a comparative edge over weaker ties for mobilizing forms of favoritism in the Chinese context. Column E shows that weak ties are better able to channel information than to mobilize favoritism ($80.1\% - 56.3\% = 23.8\%$), and strongest ties are better able to mobilize favoritism than to channel information ($84.9\% - 53.6\% = 31.3\%$). All of these findings point to the relative efficacies of weak ties and strong ties for the mobilization of network information and network favoritism in China, supporting Hypothesis 2.

Given the critique that network homophily may lead to the spuriousness of social capital ([Mouw, 2003](#)), one asks whether or not the above-reported pattern continues to hold among job seekers of equal backgrounds. [Table 3](#) presents results obtained from three pairs of logistic regression models in which a series of statistical controls for job seeker-social contact homophilies are included. The first pair of models shows that among the 4350 respondents whose personal and job characteristics are controlled for (including a "no tie" dummy in order to run the equations on the whole sample), tie strength has a negative coefficient on information

Table 3
Logit coefficients on access to information and favoritism.

	Model 1		Model 2		Model 3	
	Info.	Favor	Info.	Favor	Info.	Favor
<i>Independent variables</i>						
Tie strength	-.662***	.821***			-.654***	.795***
<i>Homophily in same</i>						
Occupation			.012	.051	.002	.058
Sector			-.193	.136	-.017	-.104
Workplace rank			-.198	.738***	-.105	.648***
<i>Control variables</i>						
Gender (male = 1)	.120	-.037	.077	.024	.117	-.027
Age	.055 [†]	.047 [†]	.059 [*]	.033	.056 [*]	.045 [†]
Age ² /100	-.061 [†]	-.053 [†]	-.065 [*]	-.036	-.061 [*]	-.050
Years of schooling	-.002	.005	.000	.001	-.002	.004
Party member	.168	-.132	.216	-.200	.168	-.137
Employed	-.103	.138	-.121	.143	-.098	.096
Professional	-.026	.004	-.011	-.070	-.021	-.051
Managerial	-.019	.049	-.089	.110	-.021	.024
Clerical	-.039	-.033	-.038	-.054	-.038	-.055
State sector	-.202 [†]	.059	-.016	-.108	-.185	.099
High rank	-.022	.043	.162	-.518**	.055	-.393 [*]
Migrant	-.163	-.083	-.160	-.052	-.165	-.075
Job entry 1980–92	.144	.387 [*]	.096	.408**	.147	.372 [*]
Job entry post-1992	.692***	.412 [*]	.593***	.472**	.695***	.393 [*]
City and no-tie dummies	Included	Included	Included	Included	Included	Included
Constant	.393	-2.066**	-1.329 [*]	.265	.339	-1.831**
Pseudo R ²	.582	.714	.562	.694	.582	.717
N	4350	4350	4350	4350	4350	4350

Two-tailed significance tests:

- [†] p < .10.
- * p < .05.
- ** p < .01.
- *** p < .001.

but a positive coefficient on favoritism and both coefficients are statistically significant. In the second pair of models, we replace tie strength with three dummy variables about job homophilies between respondents and their helpers. As shown, workplace rank homophily generates a good deal of favoritism, but occupation and sector homophilies generate neither favoritism nor information. These patterns remain unchanged in the third pair of models, in which tie strength is entered back in and its independent effect survives significance test after job homophilies between job seekers and social contacts are controlled for, confirming the validity of Hypothesis 2.

Three sets of findings from the third pair of models are of direct relevance to our Hypothesis 2 and deserve close attention. First, the independent effects of tie strength on information and favoritism are substantial. A point decrease in tie strength leads to a greater amount of network information by 48% ($[e^{-.654} - 1] \times 100\%$), and a point increase in tie strength generates a 121% ($[e^{.795} - 1] \times 100\%$) advantage on gaining network favoritism. These coefficients lend quantitatively informed evidence in support of Hypothesis 2. Second, job seekers gain a 100% ($[e^{.695} - 1] \times 100\%$) greater amount of network information in the post-1992 period than in the pre-1980 period. This is a sign that increased marketization in the post-1992 period makes network information more relevant and more active in the Chinese context. Finally, job seekers obtain a similar amount of favoritism between early and later stages of the reform era (significant coefficients of .372 and .393 for 1980–92 and post-1992 periods, respectively). This indicates the persistence of favor exchanges through the networks of social contacts in Chinese labor markets.

6. Results on Network effects on job assignments

Table 4 displays results from three logistic regression models estimated to test Hypotheses 3 and 4 about network effects

Table 4
Logistic regressions on network effects on job assignments.

	Models and dependent variables		
	1 Job-worker matching	2 Hierarchical bridging	3 Market connectedness
Information	.224**	.208 [†]	.075
Favoritism	.201**	.304 [*]	.224 [†]
Job matching		.693***	.185 [†]
<i>Control variables</i>			
Gender (male = 1)	.191**	.253 [†]	.365***
Age	-.017	-.083 [*]	.038
Age ² /100	.032	.104 [*]	-.032
Years of schooling	.099***	.292***	.105***
Party member	.060	1.453***	.154
Employed	.240 [†]	.761***	.546***
Professional	.775***	1.669***	-.308 [†]
Managerial	.625***	3.076***	.735***
Clerical	.408**	2.879***	.905***
State sector	-.074	.401 [†]	-1.420***
High rank	.173 [*]	.397 [*]	-.852***
Migrant	-.045	-.801***	.558**
Job entry 1980–1992	.233 [†]	-.093	.422 [*]
Job entry post-1992	.512***	-.407 [†]	.947***
City and no-tie dummies	Included	Included	Included
Constant	-2.352***	10.597***	5.514***
Pseudo R ²	.129	.272	.174
N	4350	4307	4276

Two-tailed significance tests:

- [†] p < .10.
- * p < .05.
- ** p < .01.
- *** p < .001.

on job assignments. Model 1 shows that among equally qualified job seekers, those who gain network information and those who gain network favoritism during job searches are more likely to be assigned to jobs whose requirements match their prior work skills

Table 5
OLS regressions on (in) wage.

Variables	Model 1	Model 2	Model 3	Model 4
Information	-.005		-.009	-.014
Favoritism	.082**		.078**	.076**
Job matching			.079**	.068**
Job's hierarchical bridging				.011**
Job's market connectedness				.018**
Job tenure for				
1–5 years		.121**		
6–10 years		.204**		
11–15 years		.097*		
<i>Control variables</i>				
Gender (male = 1)	.242**	.241**	.239**	.227**
Age	.001	.000	.001	.000
Age ² /100	.008	.009 [†]	.008	.009 [†]
Years of schooling	.052**	.052**	.050**	.046**
Party member	.080**	.080**		.058*
Employed	.425**	.424**	.421**	.405**
Professional	.210**	.205**	.196**	.179**
Managerial	.187**	.186**	.176**	.131**
Clerical	.115**	.112**	.108**	.064
State sector	-.347**	-.341**	-.345**	-.327**
High rank	.088**	.090**		.100**
Migrant	.055 [†]	.057 [†]	.056 [†]	.061 [†]
Job entry 1980–1992	.103**	.072**	.100**	.101**
Job entry post-1992	.099**	.055 [†]	.091**	.086**
City and no-tie dummies	Included	Included	Included	Included
Constant	5.148**	5.183**	5.148**	4.928**
R ²	.383	.386	.385	.401
N	4350	4350	4350	4261

Two-tailed significance tests:

- [†] $p < .10$.
- * $p < .05$.
- ** $p < .01$.
- *** $p < .001$.

or trainings. Assume, for instance, that otherwise equally qualified job seekers are given an odds of 1 for job-worker matching, the odds for those gaining network information will be 25% higher ($[e^{.224} - 1] \times 100\%$) and those gaining network favoritism will be 22% higher ($[e^{.201} - 1] \times 100\%$). These are considerable improvements made in job-worker matching through personal networks, and reveal an insignificant 3% difference in the magnitude of effects between information and favoritism. These results strongly support Hypothesis 3.

Models 2 and 3 present results from the logistic regressions on two kinds of job assignments, and both models show that job matching significantly increases one's chances of being assigned to positions of higher hierarchical bridging and higher market connectedness. This is a good sign about efficient assignments to positions of superior earning opportunities. Model 2 shows that among the equally qualified, those gaining information and those gaining favoritism are more likely than non-users of social contacts to be assigned to positions of higher hierarchical bridging, and the effect of favoritism is greater than that of information (.208 vs. .304). Model 3 shows that those gaining favoritism, but not those gaining information, are significantly more likely to be assigned to positions of market connectedness (.224). These results are in strong support of Hypothesis 4.

7. Results on network effects on wage income

Table 5 presents four OLS regression models about the direct and indirect effects of network information and network favoritism on wage income. Model 1 shows that among otherwise equal wage earners, those who gain network information during job searches do not have a net earning advantage (an insignificant coefficient of $-.005$), but those who gain network favoritism do, by an

impressive margin of 8.5% ($[e^{.082} - 1] \times 100\%$). This lends partial support to Hypothesis 5.

Model 2 treats a post-15-year job career as a point of reference, and it shows that the favoritism effect is greatest in the mid-career of 6–10 years (22.6%, $[e^{.204} - 1] \times 100\%$) and is also present and significant at the starting 5 years of a job career (12.9%, $[e^{.121} - 1] \times 100\%$). These findings make it explicit that network of favor exchanges have lasting effects on labor market opportunities and outcomes in China.

Model 3 is an extension of Model 1 by incorporating information, favoritism, and job matching as the additional predictors of wage income. It shows that information is insignificant, favoritism positive and statistically significant (confirming Model 1 finding on favoritism effect), and job matching is also positive and significant. As compared to those whose qualifications are not matched to job requirements, workers who are matched to jobs have an 8% higher wage ($[e^{.079} - 1] \times 100\%$). Combining the results from Tables 4 and 5, one can conclude that in China, network information has an indirect impact on wage income through job-matching, but network favoritism has both the direct and indirect effects (through job matching) on wage income. This lends support to Hypothesis 6.

Model 4 includes the variables of hierarchical bridging and market connectedness as additional predictors. This model shows that positions of higher hierarchical bridging and positions of higher market connectedness both increase wage income significantly. More specifically, one's wage income is increased by 1.1% ($e^{.011} - 1$) for a point increase in hierarchical bridging (an 18-point scale), and by 1.9% ($e^{.018} - 1$) for a point increase in market connectedness (a 9-point scale). The independent effects of network favoritism and job matching on wage income remain statistically significant in this model. On the whole, the findings from Table 5 lend support to Hypothesis 7.

8. Conclusion and discussion

The Chinese survey we analyzed is a large-scale probability sample of urban wage earners, which has offered us a valuable opportunity to evaluate a social network approach to labor market outcomes. While this approach has been critically challenged for design deficiencies of empirical inquiry (Mouw, 2003), the findings from China are strikingly impressive and provide a new set of research evidence in defense of an otherwise established network-theoretic tradition.

Variants of network theory have pointed to an as yet unproven association between tie strength and network resources. For the first time in research of China, we establish a solid empirical grounding for this association. We measure two kinds of network resources, information and favoritism, and gain evidence supporting both the weak tie-information link and the strong tie-favoritism link, which had been merely assumed in previous research. Among Chinese job seekers, while both weak ties and strong ties are useful in obtaining the two different kinds of network resources, there is empirical evidence about their relative efficacies (Table 2): 80% of weak tie users obtain informational benefits from social contacts during job searches, and 67% of stronger tie users and 54% of strongest tie users do so. In a sharp reversal order, while 57% of weak tie users gain forms of favoritism, 61% of stronger tie users and 85% of strongest tie users do so. These tendencies hold true among wage earners of equal backgrounds and of otherwise equal social contacts, a finding that has been confirmed through the estimates of multivariate regression models.

Our measurement innovations of information and especially favoritism permit a direct test of a theoretical explanation we have advanced of the network effect on wage income, and the findings we have obtained from the Chinese survey present

robust supports for this expectation. When respondents receive informational assistances from social contacts during job searches, they do not have a higher wage than the respondents who do not use social contacts during job searches. However, compared to their counterparts of otherwise equal qualification, these network information mobilizers are more likely to take job–worker matched positions, positions of higher hierarchical bridging, and positions of higher market connectedness, and these positions generate income returns for them. Therefore, network-transmitted information increases labor market opportunities for good jobs, which in turn result in higher wage income. This indirect effect of network information on wage income has long been assumed in social network theories of labor markets in the West, and our Chinese study for the first time generates empirical evidence about it.

Our Chinese study shows the significance of network favoritism to increase wage income both directly and indirectly. As compared to otherwise equally qualified workers, beneficiaries of favoritism tend to have a higher wage at both starting and later years of the job career, to have a greater probability of being assigned to job–worker matched positions, and to more likely have occupied positions of superior earning opportunities that are embedded in hierarchical bridging and market connections. The end result of these network effects is that the relationally favored referrals have the greatest cumulative wage advantages, followed by the referrals who obtain the benefit of network information, and non-referrals of otherwise equal qualifications have to take the lowest spot in a network-relevant job-wage hierarchy.

The identified patterns of network influence shed a light on the social characters of labor markets in China's transition economy. First, China's labor markets are socially crowded. There, 59% of job seekers use social contacts with an average of 2.77 contacts (Tables 1 and 2). This means that a job opening of good pay that attracts, say 60 applicants, will generate approximately 100 social contacts. Put in a practical way, there will be 2000 social contacts mobilized when a mid-size employer has 20 job openings in a regular year. Second, this socially crowded labor market is full of network influence and favor exchanges. Since, again from Table 2, 75% of the 2.77 contacts offer forms of favoritism to job seekers, in any given year the above-described mid-size employer will be contacted by 1500 ($2000 \times .75$) socially connected others, averaging four persons a day! Even if the speculative number of 60 applicants reduces by half or more, one can still sense the thickness of network influence in China's socially crowded labor markets. Most recent Chinese surveys (Wu, 2011; Zhang and Guo, 2011; Obukhova, 2012) show that this socially crowded labor market has maintained a great deal of social network influence even when marketization and privatization have taken a bolder impact on China's economy and society.

Is social network influence of Chinese characterization conflicting with the logic of marketization? Not necessarily and not always so. We have known from the Chinese survey that social contacts of all strengths channel a great amount of job information, and network-transmitted information, which was institutionally irrelevant to state job assignments before, has been increasingly important from the earlier to latest stage of the reform era, and more important in the non-state than in the state sector. We have also known that China's socially crowded labor markets are far from efficient, as job–worker matching applies only to one third of the positions. Because network information promotes job–worker matching, information-relevant network influence is a social–relational mechanism that increases the efficiency of China's labor markets. That is, the greater role of network information in job matching, the greater efficiency of labor allocation. This fits Granovetter's original argument on the role of social networks in labor markets of advanced capitalism.

Favoritism-relevant network influence may not be as bad as it is thought to be, so far as labor market efficiency is concerned. Network favoritism, like network information, is found to be an equal promoter of job–worker matching. The favoritism effect on assignment to positions of superior earning opportunities, on the other hand, should not be taken as purely bad either, because these positions are likely to be filled by workers whose qualifications match job requirements (Table 4 results support this point). The various assistances that we classify under the label of network favoritism may contain person-specific information about the qualities of the referrals that our measure does not identify. If, for example, a favor receiver is a skillful communicator with a likable personality, the person would be a good fit for a job of high hierarchical bridging or of high market connectedness. Future research should explore the contents of favoritism, paying attention to the extent to which these contents contain person-specific information that may be ultimately at work in improving job–worker matching and labor market efficiencies.

We do have gained a finding that is consistent with the original meaning and perhaps the ugly side of favoritism. Beneficiaries of favoritism, when compared to their counterparts of otherwise equal backgrounds and qualifications, are found to have higher wage, and the advantage is substantial and durable in the area of 10–23% wage advantages throughout the first 15 years of a job career (Table 4). In an efficient labor market, this favoritism-wage advantage is above the level of a market reservation wage, and it is either reallocated to better-qualified workers with greater productivities, or cut back to the level of market reservation wage. Either way, favoritism-free employers will be more competitive and contribute more to economic growth on the societal level. Bad network favoritism is to be reduced before a labor market is getting more efficient.

Our study has important implications for directions of future social network research of labor markets in and beyond the Chinese context. To say the least, the network effect on wage income is, as we argued and showed, causal and non-spurious. While tie strength is a fair proxy to network information and network favoritism, it cannot substitute for the latter. Instead, researchers must measure these two forms of network resources and put them in causal models to test the network effect on labor market opportunities and outcomes, including wage income. On the other hand, in China and elsewhere it still remains a research issue about what kinds of information and what forms of favoritism may and may not be mobilized by weak ties and strong ties. In terms of network effect on wage income, our theoretical explanation has included network favoritism and positions of superior earning opportunity as additional causal mechanisms whereby personal networks matter for wage income. To what extent these causal mechanisms are relevant to non-Chinese societies is also an empirical question to be answered. Theoretically, employers in any society can be rational by resisting network influences of favoritism, but they also can be socially constrained by taking all sorts of actions to satisfy the relationally favored. It is a research task to specify and examine the configurations of social and institutional contexts that vary in relevance and significance of network influences, be it through information or through favoritism. Comparative studies across political economies are of special instrumentality to research on these issues.

Acknowledgements

The Chinese survey analyzed in the paper was financed by a grant from Hong Kong's Research Grants Committee (HKUST6052/98H) to the first author. Two research grants from China's Social Science Foundation to the first author (Project

#:11AZD022 and 13&ZD177), the University of Queensland Post-doctoral Fellowship and the Outside Studies Program of La Trobe University awarded to the second author, and a research grant from the Australian Research Council (DP130100690) to the first two authors supported data analysis and revision of this article. We are grateful to the editor and anonymous reviewers of *Social Networks* for helpful comments and suggestions.

References

- Akerlof, G.A., 1970. The market for 'lemons': quality uncertainty and the market mechanism. *Q. J. Econ.* 84, 488–500.
- Bian, Y., 1994. Work and Inequality in Urban China. State University of New York Press, Albany, NY.
- Bian, Y., 1997. Bringing strong ties back in: indirect ties, network bridges, and job searches in China. *Am. Sociol. Rev.* 62, 266–285.
- Bian, Y., 2002. Institutional holes and job mobility process: Guanxi mechanisms in China's emerging labor markets. In: Gold, T., Guthrie, D., Wank, D. (Eds.), *Social Connections in China*. Cambridge University Press, England, pp. 117–136.
- Bian, Y., 2008. Urban occupational mobility and employment institutions: hierarchy, market, and networks in a mixed system. In: Davis, D., Wang, F. (Eds.), *Creating Wealth and Poverty in China*. Stanford University Press, Stanford, CA, pp. 165–183.
- Bian, Y., Huang, X., 2009. Network resources and job mobility in China's transitional economy. *Res. Sociol. Work* 19, 255–282.
- Bian, Y., Logan, J.R., 1996. Market transition and the persistence of power: the changing stratification system in China. *Am. Sociol. Rev.* 61, 739–758.
- Bian, Y., Ang, S., 1997. *Guanxi* networks and job mobility in China and Singapore. *Soc. Forces* 75, 981–1006.
- Borocz, J., Southworth, C., 1998. 'Who you know' earnings effects of formal and informal social network resources under late state socialism in Hungary, 1986–87. *J. Socio-Econ.* 27, 401–425.
- Boxman, E.A., De Graaf, P.M., Flap, H.D., 1991. The impact of social and human capital on the income attainment of Dutch managers. *Soc. Netw.* 13, 51–73.
- Bridges, W., Villemez, W.J., 1986. Informal hiring and income in the labor market. *Am. Sociol. Rev.* 51, 574–582.
- Corcoran, M., Datcher, L., Duncan, G., 1980. Information and influence networks in labor markets. In: Duncan, G., Morgan, J. (Eds.), *Five Thousand American Families: Patterns of Economic Progress*, vol. 8. Institute for Social Research, Ann Arbor, MI, pp. 1–37.
- Coverdill, J.E., 1998. Personal contacts and post-hire job outcomes: theoretical and empirical notes on the significance of matching methods. *Res. Soc. Stratif. Mobil.* 16, 247–269.
- De Graaf, N.D., Flap, H.D., 1988. 'With a little help from my friends': social resources as an explanation of occupational status and income in West Germany, the Netherlands, and the United States. *Soc. Forces* 67, 452–472.
- Fernandez, R.M., Weinberg, N., 1997. Sifting and sorting: personal contacts and hiring in a retail bank. *Am. Sociol. Rev.* 62, 883–902.
- Fernandez, R.M., Castilla, E.J., 2001. How much is that network worth? Social capital in employee referral networks. In: Lin, N., Burt, R., Cook, K. (Eds.), *Social Capital: Theory and Research*. Aldine-de Gruyter, Chicago, pp. 85–104.
- Granovetter, M., 1973. The strength of weak ties. *Am. J. Sociol.* 78, 1360–1380.
- Granovetter, M., 1974. *Getting a Job: A Study of Contacts and Careers*. Harvard University Press, Cambridge, MA.
- Granovetter, M., 1981. Toward a sociological theory of income differences. In: Berg, I. (Ed.), *Sociological Perspectives on Labor Markets*. Academic Press, New York, pp. 1–47.
- Granovetter, M., 1995. Afterword: Reconsiderations and a New Agenda. In *Getting a Job*. The University of Chicago Press, Chicago, pp. 139–182.
- Huang, X., 2008. *Guanxi* networks and job searches in China's emerging labour market: a qualitative investigation. *Work Employ. Soc.* 22, 467–484.
- Hwang, K., 1987. Face and favor: the Chinese power game. *Am. J. Sociol.* 92, 944–974.
- Javanovic, B., 1979. Job matching and the theory of turnover. *J. Polit. Econ.* 87, 972–990.
- King, A.Y., 1994. Kuan-hsi and network building: a sociological interpretation. In: Tu, W.M. (Ed.), *Living Tree: The Changing Meaning of Being Chinese Today*. Stanford University Press, Stanford, CA, pp. 109–126.
- Lin, N., 1982. Social resources and instrumental action. In: Marsden, P.V., Lin, N. (Eds.), *Social Structure and Network Analysis*. Sage, Beverly Hills, CA, pp. 131–145.
- Lin, N., 1999. Social networks and status attainment. *Annu. Rev. Sociol.* 25, 467–488.
- Lin, N., Ensel, W., Vaughn, J., 1981. Social resources and strength of ties: structural factors in occupational status attainment. *Am. Sociol. Rev.* 46, 393–405.
- MacDonald, G.M., 1980. Person-specific information in the labor market. *J. Polit. Econ.* 88, 578–597.
- Marsden, P.V., Hurlbert, J.S., 1988. Social resources and mobility outcomes: a replication and extension. *Soc. Forces* 66, 1038–1059.
- Montgomery, J.D., 1992. Job search and network composition: the strength of weak ties. *Am. Sociol. Rev.* 57, 586–596.
- Mouw, T., 2003. Social capital and finding a job: do contacts matter? *Am. Sociol. Rev.* 68, 868–898.
- National Bureau of Statistics, 2006. *China Statistical Yearbook 2006*. Available from: China Data Online (<http://chinadataonline.org/>) (accessed 02.03.14).
- National Bureau of Statistics, 2011. *China Statistical Yearbook 2011*. Available from: China Data Online (<http://chinadataonline.org/>) (accessed 02.03.14).
- Naughton, B., 2007. *The Chinese Economy: Transitions and Growth*. MIT Press, Cambridge, MA.
- Nee, V., Cao, Y., 2004. Market transition and the firm: institutional change and income inequality in urban China. *Manage. Org. Rev.* 1, 23–56.
- Obukhova, E., 2012. Motivation vs relevance: using strong ties to find a job in China. *Soc. Sci. Res.* 41 (3), 470–480.
- Podolny, J.M., 1993. A status-based model of market competition. *Am. J. Sociol.* 98, 929–972.
- Podolny, J.M., 1994. Market uncertainty and the social character of economic exchange. *Adm. Sci. Q.* 39, 458–483.
- Portes, A., 1998. Social capital: its origins and applications in modern sociology. *Annu. Rev. Sociol.* 24, 1–24.
- Prendergast, C., Topel, R.H., 1996. Favoritism in organization. *J. Polit. Econ.* 104, 958–978.
- Rees, A., 1966. Information networks in labor markets. *Am. Econ. Rev.* 56, 559–566.
- Rosenbaum, J.E., DeLuca, S., Miller, S.R., Roy, K., 1999. Pathways into work: short- and long-term effects of personal and institutional ties. *Sociol. Educ.* 72, 179–196.
- Saloner, G., 1985. Old boy networks as screening mechanisms. *J. Labor Econ.* 3, 255–267.
- Sato, H., 2003. *The Growth of Market Relations in Post-reform Rural China: A Micro-analysis of Peasants, Migrants and Peasant Entrepreneurs*. Routledge Curzon, New York.
- Seidel, M.L., Polzer, J.T., Stewart, K.J., 2000. Friends in high places: the effects of social networks on discrimination in salary negotiations. *Adm. Sci. Q.* 45, 1–24.
- Simon, C.J., Warner, J.T., 1992. Matchmaker, matchmaker: the effect of old boy networks on job match quality, earnings, and tenure. *J. Labor Econ.* 10, 306–330.
- Smith, S.S., 2000. Mobilizing social resources: race, ethnic, and gender differences in social capital and persisting wage inequalities. *Sociol. Q.* 41, 509–537.
- Stigler, G., 1961. The economics of information. *J. Polit. Econ.* 60, 213–225.
- Taylor, D.M., Doria, J.R., 1981. Self-serving and group-serving bias in attribution. *J. Soc. Psychol.* 113 (2), 201–211.
- Walder, A., 1992. Property rights and stratification in socialist redistributive economies. *Am. Sociol. Rev.* 57, 524–539.
- Wu, Y.X., 2011. Social relations, first jobs, and occupational mobility. *J. Sociol. Res.* 128–152.
- Yakubovich, V., Kozina, I., 2000. The changing significance of ties: an explanation of the hiring channels in the Russian transitional labor market. *Int. Sociol.* 15, 479–500.
- Yan, Y., 1996. *The Flow of Gifts: Reciprocity and Social Networks in a Chinese Village*. Stanford University Press, Stanford, CA.
- Yang, M., 1994. *Gifts, Favors, and Banquets: The Art of Social Relationships in China*. Cornell University Press, Ithaca, NY.
- Zhang, S., Guo, X.X., 2011. Social network resources and their impacts on wage income: a quantile regression analysis. *Chin. J. Sociol.*, 94–111.