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# *Guanxi* circle and organizational citizenship behavior: Context of a Chinese workplace

**Jar-Der Luo, PhD[1] · Meng-Yu Cheng, PhD[2] ·
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**Abstract** According to leader-member exchange (LMX) theory, good vertical working relations encourage organizational citizenship behavior (OCB) that benefits organizations. But how does supervisor-subordinate *guanxi* influence employees' extra-role behaviors in relation to organizational interests? To answer this question, this paper examines a particular *structural* phenomenon in the context of the Chinese workplace. *Guanxi circles* (the phenomenon under investigation) are ego-centered *guanxi* networks with a powerful person at the center. Although a circle leader and his or her group members exchange favors for private goals, they need to actively balance their own interests with the interests of people/ groups outside the *guanxi* circle; so as to maintain a harmonious relationship with the larger network. For this reason, extra-role performance benefiting the larger network is encouraged in the management of a *guanxi* circle. By studying survey data from China, we demonstrate how a wide variety of circle roles facilitate extra-role performance, and ultimately benefit the organization as a whole. Circle bridges have higher OCB toward organizations (OCB-O) than peripheral members of a circle, who in turn have higher OCB-O than core members of the same circle.

**Keywords** *Guanxi* circle · Organizational citizenship behavior · Bridge · LMX

Citizenship behavior toward organizations (OCB-O) is defined as discretionary behavior that benefits an organization (Organ, 1988). In other words, it is a worker's behavior beyond that which is within the responsibilities of normal work. OCB-O is considered an important factor for organization administration (Katz & Kahn, 1966), since it encourages good working attitudes and organizational behavior, such as cultivating an employee's feeling

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of security (Feather & Rauter, 2004). In addition, OCB-O makes the organization's operations more effective and efficient (Lapierre & Hackett, 2007; Organ, 1988). For example, a salesperson's OCB-O increases customer satisfaction (Hopkins, 2002).

Why is a worker willing to perform extra-role behavior to benefit the organization, rather than him- or herself? Many excellent studies have illustrated the importance of individual-level variables, such as an individual's altruistic motivation (Bolino, 1999; Rinoux & Penner, 2001), socio-demographic characteristics (Farh, Earley, & Lin, 1997), and attitudinal factors (Organ, 1988; Organ & Ryan, 1995). This paper extends the above research beyond the individual level, and establishes a framework that takes into account interactions between individuals and groups as well as groups of individuals embedded in a social network.

To understand how social ties and social networks influence an employee's OCB-O, it is necessary to examine leader-member exchange (LMX) theory. According to LMX, a supervisor divides his or her subordinate vertical working ties into two categories: "in-group" and "out-group," which are treated differently. "In-group" members enjoy high-quality exchanges, and in return must show loyalty to and share resources with their supervisor. "Out-group" staff only perform formal and work-related jobs in low-quality exchanges (Graen, 1976; Graen & Uhl-Bien, 1995). LMX is linearly associated with OCB-O; high-quality exchanges with supervisors significantly strengthen an employee's extra-role behavior which benefits the whole organization (Hackett & Lapierre, 2004; Ilies, Nahrgang, & Morgeson, 2007; Lapierre & Hackett, 2007; Settoon, Bennett, & Liden, 1996;- Wat & Shaffer, 2005).

The network position of an individual also deeply influences their organizational behavior (Scott, 2000), and citizenship behavior (Settoon & Mossholder, 2002). However, most network structural variables under study are limited in tie strength, centrality, structural hole effects, and so on (Burt, 1992; Marsden & Campbell, 1984; Wasserman & Faust, 1994), and network research on OCB-O is not well-developed (Bowler, 2002).

LMX focuses on the vertical working relations in a workplace. There is little research on intra-organizational networks composed of both vertical and horizontal ties (House & Aditya, 1997). Some critics suggest that friendship and informal ties need to be taken into account in addition to working relations (Boyd & Taylor, 1998; Zhang, Li, & Harris, 2015). On top of this, the dichotomous categorization of vertical relations ignores the complexity of social exchange. Multiple types of vertical and horizontal exchanges should be taken into consideration (Goodwin, Bowler, & Whittington, 2009; Sparrowe & Liden, 2005), and the organizational context in which embedded dyadic exchanges play out is also an important factor (Cogliser & Schriesheim, 2000; Sparrowe & Liden, 1997, 2005). Social exchange does not exist in a vacuum.

Based upon the above discussion, this paper's research question is: *In a Chinese workplace full of personal guanxi, how do individuals interact in an organizational network beyond the typical LMX ties?* LMX ties are mainly vertical and working relations, while *guanxi* is characterized by personalized ties composed of mixed instrumental and expressive exchanges embedded in an ego-centered network, with what indigenous sociologist Fei (1992) called "differentiated modes of association."

## The puzzle of *guanxi* and OCB-O

Research on *guanxi* has already produced a plethora of interesting results, but most research has focused on relational dimensions of *guanxi*, including the nature of *guanxi* (Bond & Hwang, 1986; Chua, Morris, & Ingram, 2009; Tsui & Farh, 1997), *guanxi* quality (Bian, 1997; Chen & Chen, 2004; Law, Wong, Wang, & Wang, 2000), and *guanxi* strategy (Park & Luo, 2001; Peng & Luo, 2000). In addition to *guanxi* itself, various studies investigate its antecedent variables (Chen & Peng, 2008; Chen & Tjosvold, 2006; Xin & Pearce, 1996; Zhu, Chen, Li, & Zhou, 2009), mediating variables (Gu, Hung, & Tse, 2008; Zhuang, Xi, & Tsang, 2010), and the outcomes of *guanxi* practice (Bian, 1997; Hui, Law, & Chen, 1999; Luo, 1997), within both intra- and inter-organizational settings.

Several cultural elements provide foundations for *guanxi* to operate in Chinese workplaces. First, it is important to recognize that family ethics is at the root of Chinese *guanxi* (Bond & Hwang, 1986; Chua et al., 2009; Morris, Podolny, & Sullivan, 2008; Yang, 1993). What Granovetter (2016) calls "consummatory motivations" may better capture this concept of family ethics—that is, a relation continues for its own sake, since its main purpose is not only affective attachment; rather, it is a mixture of interpersonal expressive feelings, community identity, and unavoidable obligations. Second, China is a particularistic society, and people treat different relations using different principles of social interaction. This is what indigenous sociologist Fei (1992) called "differentiated modes of association."

Based on family ethics and particularism, the inner most ring of a Chinese ego-centered network is called a "family tie," which includes real- and pseudo-family ties (Luo, 2005; Yang, 1993). These ties entail maintaining loyalty, bearing unlimited responsibility, and sharing all earned interests with each other. That is why Hwang (1987, 1988) used the term "rule of need" to explain this tie's exchange principle. An important feature of Chinese *guanxi* is its moral requirement of obligation (Mao, Peng, & Wong, 2012). Both sides of a family tie maintain complete and unbreakable responsibility to each other, just like "obligatory ties" defined by Zhang and Zhang (2006).

Another type of *guanxi* relationship is formed through long-term, frequent, and wide-ranging social exchange, or "favor exchanges." In these "familiar ties" Chinese people mix personal and public interests (Chen & Chen, 2004) in the exchanges, simultaneously building up expressive and instrumental ties with exchange partners by following what Hwang called the "rule of favor exchange" (1987). Conducting long-term favor exchanges is the basis of mutual interactions between "familiar ties" (Yang, 1993).

Familiar ties constitute the main part of the middle ring of the ego-centered network. Unlike family ties, familiar ties are much more flexible. When needed, people joined by familiar ties participate in collective action and share the outcomes of cooperation. In terms of obligation, they are "reciprocal ties" (Zhang & Zhang, 2006), since their responsibilities are long-term but limited. Therefore they may not be included in group actions if they are judged to be unnecessary.

The outermost ring of an ego's network is composed of "acquaintance ties" (Luo, 2005; Yang, 1993), which are predominantly instrumental relations following the "rule of equity" (Hwang, 1987), so their obligation is limited to short-term exchanges for personal interests. Looking at "acquaintance ties" in terms of obligation, they could also be called "utilitarian ties" (Zhang & Zhang, 2006). In the dynamic process of

*guanxi* operations, acquaintance ties involved in valuable exchanges have a strong possibility of becoming mixed ties (Chen & Chen, 2004; Fu, Tsui, & Dess, 2006).

Working and friendship ties need to be investigated jointly in intra-organizational social network studies (Berman, West, & Richter, 2002; Boyd & Taylor, 1998; Burris, Rodgers, Mannix, Hendron, & Oldroyd, 2009; Law et al., 2000), and this argument is especially true when studying a Chinese workplace, which is full of mixed ties, that is, a mix of instrumental and expressive ties (Farh, Tsui, Xin, & Cheng, 1998; Hwang, 1987; Smith, Huang, Harb, & Torres, 2012). Thus, the research question then becomes: How do vertical exchanges that take place in the context of mixed ties between a supervisor and his or her staff influence extra-role behaviors in terms of public interests? In other words, how do private social exchanges mainly for personal interest eventually result in behavior that benefits the whole organization?

There is a contradiction at the heart of the relationship between *guanxi* operations and citizenship behavior: In-group members mainly exchange favors between one another, especially with their supervisor, so how can these extra-role exchanges benefit the whole organization? Will in-group members prioritize the interests of their personal *guanxi* over the interests of the organization? Favor exchanges may be motivated by altruism, but in general, they are only for long-term mutual benefit. To explain this puzzle, we thus propose using a structural perspective to analyze *guanxi* circles in the Chinese workplace. In order to resolve the aforementioned contradiction, this paper identifies paradoxical thinking (Ashforth & Reingen, 2014) in circle operations, which is used to balance the interests inside and outside a *guanxi* circle. That is, a circle leader must dynamically balance the interests inside and outside his or her own circle to maintain the harmony of the larger network, no matter whether the larger network is a department, an organization, a business group, or even an industry. In other words, a circle leader cannot ignore the interests of the larger network in favor exchanges with his or her in-group members.

## Theory and hypotheses

### What is a *guanxi* circle?

A *guanxi* circle, or what Chinese sometimes call a "small circle," is an ego-centered network that adapts Chinese family relations to the workplace: Core members have pseudo-family roles that tie them to the centered ego of a *guanxi* circle. At the same time, familiar ties form a protective belt between the core and outsiders. Outsiders, or out-group members, include people connected by acquaintance ties as well as strangers (Luo & Yeh, 2012).

*Guanxi* practices (Chen & Chen, 2004) make a Chinese person divide their in-circle into core and peripheral members. The protective belt formed from familiar ties is the key to explaining why Chinese circle operations are flexible. Since the constraints and benefits are limited by the dynamic operations of familiar ties, it is possible for the centered ego of a circle to earn benefits from familiar ties at emergent moments in one setting, and yet be constrained in different circumstances.

In "high power-distance" societies like China (Hofstede, 1980), formal or informal power plays a key role in circle operations. All Chinese workers have their own ego-centered *guanxi* networks, but only those actors with power and influence are real stakeholders in a workplace. The centered ego of a circle needs power, resources, or
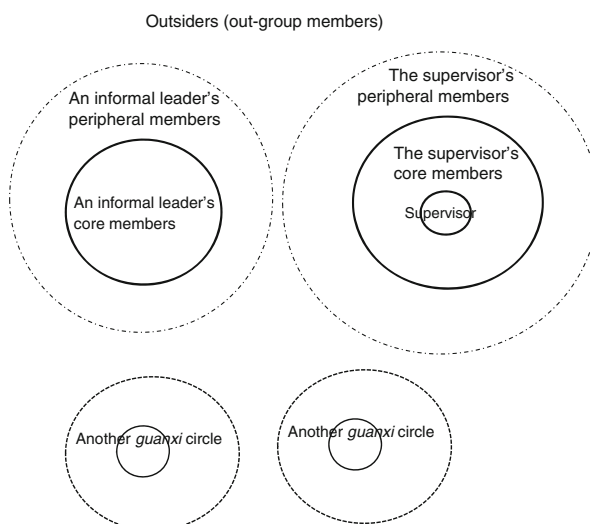
influence to mobilize circle members to launch a series of collective actions, so that a *guanxi* circle can execute organizational tasks, achieve the circle's goals, seize more resources for its own use, and satisfy members' needs.

A circle leader, either a supervisor or another powerful person in an organization, generally develops common goals to organize collective actions. This allows the *guanxi* circle to seize resources from outside, and share resources for member's mutual benefit. In other words, the circle leader strives for a better allocation of resources from the larger network through the efforts of the whole circle, and then distributes the benefits in a "pork barrel" manner to all members via favor exchanges.

In a brief summary, the network structure of *guanxi* circles in a Chinese workplace is illustrated in Fig. 1. Circle cores and peripheral members are centered around the organization's supervisor, and both of these two types of circle members are "in-group" members for the supervisor. Other informal leaders have their own circle core and circle peripheral members. However, some individual workers are excluded from all circles, so they are "outsiders" or "out-group members" in the organization.

A *guanxi* circle has two rings: One composed by circle core members (core members) and the protective belt of circle peripheral members (peripheral members). The supervisor's core members are those positioned in the core of the supervisor's circle, while the supervisor's peripheral members are defined as those in the peripheral ring of the supervisor's circle. Those with the highest degree of centrality outside the supervisor's core are called "informal leaders" (Wasserman & Faust, 1994), since they may not have formal power but excise strong informal influence over others (Krackhardt, 1992; Mayo, 1945). In addition to the supervisor's circle, informal leaders have their own circle core and peripheral members, and "informal leaders' core members" are defined as those positioned in the core of an informal leader's circle.

Some informal leaders' *guanxi* circles have overlapping areas with the supervisor's circle, in which circle bridges (bridges) connect otherwise isolated groups. The term



**Fig. 1** The diagram of segregated structure of *guanxi* circles

Outsiders (out-group members)

An informal leader's
peripheral members

**An informal
leader's core
members**

Bridges

The supervisor's
peripheral members

The supervisor's
core members

Supervisor
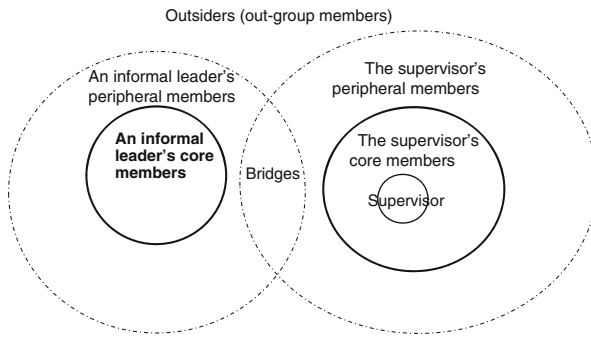
**Fig. 2** The role of bridges in *guanxi* circle structure

"circle bridges," which is shown in Fig. 2, are used to define those who have roles in the overlapping area between two or more circles.

Duality and paradox are always built into a complex organization (Johnston & Selsky, 2006). In circle operations, there is a dynamic process of managing conflicting outcomes that can be categorized as "paradoxical thinking" (Ashforth & Reingen, 2014). This occurs when a circle leader needs to consider in-group members' interests as well as out-group members' in order to maintain his or her reputation in a larger network. If circle leaders only protect their circle members' interests then the circle structure will become dense and closed. This will lead to them being excluded from other groups and the leader will be unable to mobilize the larger network for launching large-scale collective actions (Granovetter, 1995). That will result in a segregated network structure full of isolated, dense, and small groups, which is also shown in Fig. 1.

On the other hand, if the leaders cares only for the interests of the larger network, then their *guanxi* circle will disperse and network structure will become diffuse. Only the leaders who can dynamically balance in-group and out-group interests can create a weakly-coupled structure in a larger network, in which many bridges connect otherwise isolated, dense groups. A successful circle leader can maintain and mobilize the members of his or her own circle, while simultaneously being fully connected with the larger network so as to mobilize all members in the larger network (Granovetter, 2002).

Weakly-coupled network structures generally indicate a harmonious atmosphere among various circles, in which circle members believe the development of the whole organization benefits each individual circle. In this structure, there is a strong bond within circles, but at the same time there are weak bonds with members of external circles. Thus, a Chinese worker achieves personal goals through the collective actions of a small circle, while enjoying the feeling of belonging and security gained from being in a larger network. He or she will feel obligated to the larger network, but also enjoy the opportunity to develop his or her own *guanxi* circle. In a weakly-coupled structure, a successful circle leader knows how to integrate the interests of their own small circle and the interests of the larger network when executing favor exchanges with his or her in-group members.

To balance both sets of interests, a leader will prioritize fairness in a larger network over the interests of circle members. This phenomenon has been investigated in the Chinese construction industry, in which circle members' salary payments may be delayed while payment to outsiders is made on time (Cai & Jia, 2009). A successful circle leader always balances the principle of favor exchanges in the small circle, and

the principle of fairness in the larger network, so that he or she can retain a strong base for his or her *guanxi* circle to mobilize resources and at the same time realize the possibility of large-scale collective actions in the larger network (Granovetter, 2002).

Summarizing the arguments above, a successful circle leader in a weakly-coupled structure must, by definition, take care of wider interests in addition to those of his or her own circle. So when he or she conducts favor exchanges with circle members, the latter's extra-role behavior, which benefits the larger network, is generally encouraged. As a result, personal favor exchanges in such a network structure may increase citizenship behavior within an organization. In this process, bridges play a central role in connecting each circle with the larger network.

These arguments concerning *guanxi* circles and OCB-O (above and beyond OCB toward individuals [OCB-I]) thus lead to the research question: What are the differences in organization citizenship behavior among various individual network positions in a circle structure?"

### *Guanxi* circle roles and OCB-O

Social exchange theory (Blau, 1964) argues that the contents of social exchange include not only personal physical interests but also psychological support, such as intimacy, in-group feelings, social esteem, and so forth. Social exchange is rarely immediately rewarded, since it is open-ended both in terms of content and time. Trust is fostered in social exchange with the expectation that the favor will be returned after a certain period of time. In this process, all exchange partners need to demonstrate trustworthiness and display extra-role behavior that provides open-ended, mutual psychological support. Motivated by future reward, a Chinese actor often enters into a circle and conducts social exchanges with circle members so that he or she can accumulate personal social capital (Lin, 2001) and eventually build up his or her own *guanxi* circle. Working hard, voluntarily taking responsibility, sharing resources, and offering extra services are common for a circle member. *Guanxi* circles are thus very effective and efficient work units.

Outsiders (out-group members for all circles) in an organization are the ones who are excluded from all favor-exchange networks, so extra-role performance often shown in favor exchanges is not expected from outsiders (Graham, 1991). Outsiders who are not part of various *guanxi* circles, including the supervisor's and informal leader's circles, may be thought of as calculative and selfish, since he or she performs only in-role duties following his or her job description.

**Hypothesis 1** An out-group member has a lower level of organizational citizenship behavior than an in-group member.

Chinese workplaces are embedded in a context rich culture (Hall, 1976), in which people tend to not voice opinions directly and may use many implicit signals in communication. In a context rich environment like this, how to signal one's intention, and how the signal is interpreted are important factors for both sides of the favor exchange (Han, 2010). Circle members may actively signal loyalty and demonstrate their commitment to the circle to let their circle leader screen these signs (Spence, 1974) and attract his or her attention, via the mechanism of OCB-O. In this process, circle peripheral members may transition to the inner rings, and finally enter into a circle's core, since a circle leader may dynamically move people in and out of his or her core and circle.

In a weakly-coupled network structure, OCB-O is perhaps the most effective mechanism for signaling one's intentions, and progressing beyond one's current location in the *guanxi* cirle. Even efficient and effective in-role performance is not considered enough to signal one's intentions to enter a core. There are some extra-role behaviors, such as personal-tailored service, ingratiating behaviors, and opinion conformity that may not be welcome. Therefore, displaying OCB-O in a way accepted by others, especially in a weakly coupled network structure, may be a good strategy to communicate one's intention (Bolino, 1999). This signaling implies that the actor is highly committed and is willing to take more responsibility, which may result in a positive evaluation from the supervisor (McAllister, 1995). This argument is based upon the assumption that most, if not all, peripheral members want to move to the core position from the peripheral position of the circle via the means of OCB-O.

Core circle members play the role of pseudo-family ties for the supervisor. They maintain loyalty, bear unlimited responsibility, and share all earned interests with the supervisor and other core members. Hence, the core of each circle has a dense network structure and a stable relationship with the supervisor. In contrast to peripheral members who only have limited responsibility to and less chance of frequent exchange with the supervisor, circle core members do not need to give signals because they do not need to move into the core position from the peripheral position. In addition, core members understand the needs of the circle more than circle peripheral members, and thus do not need to do extra work, since they know which actions will have the best result. Peripheral members need to not only impress their supervisors by OCB-O, but can also use this signal to become closer with other colleagues in the circle. This leads us to Hypothesis 2:

**Hypothesis 2** Within a supervisor's circle, peripheral members have a higher level of OCB-O than core members.

Circle bridges are people located in the overlapping area between two or more circles. They must be "in-group" members, either core or peripheral, of two or more circles. [1] Outsiders by definition are those isolated from all *guanxi* circles, and thus cannot have a substantive effect on cooperation between the two circles. The circle bridge is committed to multiple circles, and is not just limited to one circle. In a weakly-coupled structure, brokerage behaviors of this kind are often encouraged by circle leaders, since the leaders need to keep harmonious relations in the larger network, as stated above. Bridging ties function well in a weakly-coupled structure, and overlapping areas among various circles are created.

The bridging position has information advantage and control benefits (Burt, 1992), so bridges enjoy more organizational resources. To maintain this position, the actor must actively conduct favor exchanges with several circles, and display extra-role behavior to signal his or her friendship. In addition, a bridge does not try to please any specific circle or circle leader; so his or her signaling behavior generally benefits the whole organization rather than a particular person or group.

However, maintaining this position is not easy (Burt, 2002). Whenever circles compete with each other for resources, bridges may turn into "Simmelian ties" that are highly constrained by different groups (Krackhardt, 1999), and become the focal

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[1] The circle bridge may also be a core member of one circle. However, in our computation method, when an actor is a supervisor's core member and bridge at the same time, he or she will be coded as "core." So, all bridges in this article are circle peripheral members.

point of group conflicts. To avoid conflict, bridges try to maintain harmony among various groups. So when comparing bridges to members of a fixed circle, including the supervisor's peripheral members, the former are more likely to engage in citizenship behavior that reduces conflict within the organization. The third hypothesis is thus:

**Hypothesis 3** Circle bridges have a higher level of organizational citizenship behavior than circle peripheral members.

## Weakly-coupled network structures

All the above hypotheses are based on one assumption: fully connected circles exist in a healthy organizational structure, which is what Granovetter called a "weakly-coupled network structure" (2002). If this is not the case, disconnected groups have poor communication, cold inter-group relations, and frequent misunderstandings. Furthermore, these isolated groups may easily fall into conflict.

Individual workers adjust their behavior to match their environment (Podsakoff, MacKenize, Moorman, & Fetter, 1990), since they have very limited attentive capacity and resources (Dierdorff, Rubin, & Bachrach, 2012; Schmidt & Dolis, 2009). Therefore an individual commits to public interests which maximize long-term individual utility only when he or she feels safe (Bergeron, 2007). In an environment with fierce group conflicts, circle members often struggle for short-term group interests, rather than the long-term benefit of the whole organization. Average OCB decreases in this kind of environment.

This is one of the most common hazards created by *guanxi* circles. Since circle members not only have common intimate relations, but also shared interests, they need to conspire to seize resources from outside and then share the resources. This means that their loyalty or friendship may continue for the maintenance of collective interests. Thus, circle operations fragment the structure of Chinese workplaces, which are often partitioned into several *guanxi* circles without bridges connecting them, as is shown in Fig. 1. It is challenging for an organization's supervisor to build up mutual trust in this kind of partitioned and fragmented network. One way to develop trust is through bridges among circles, which we call "circle bridges."

The existence of various types of circles with bridges generally indicates a structure with a diversified, yet united workplace environment. Without such a healthy network structure, *guanxi* circles can cause adverse outcomes.

First, the centralization of power in a supervisor's circle often results in a power monopoly. In this case, most members in the larger network gather around one powerful supervisor, as shown in Fig. 3. All other *guanxi* circles are actually subsets of the supervisor's circle. It is a structure with no independent circles.

This type of network has high group-centrality (Wasserman & Faust, 1994), that gives powerful supervisors the opportunity to exercise a strong influence on all network members' attitudes and behavior (Chung, Park, Moon, & Oh, 2011). Strong pressure from a highly centralized power may make network members adopt ingratiating behavior and opinion conformity, thus reducing proactive and voluntary action. This will decrease average citizenship behavior in the larger network.

Second, a network with a single circle gives rise to more outsiders in the organization's informal network. There are fewer people to connect with each other in a network

with high group-centrality (Sparrowe, Liden, Wayne, & Kraimer, 2001), and many workers become outsiders. In general, outsiders are people in an organization who have relatively distant relationships with each other, so they do not want to conduct extra-role performances to help each other or the organization. A network with a large proportion of outsiders will have a lower average OCB-O.

Third, if there is structure with various independent circles but no bridges to help connect otherwise isolated small groups (Fig. 1), the end result will be poor communication, little cooperation, and even fighting among groups. However, if there are several bridges among circles which are separated by long-distance paths, there will be a dramatic decline in the average distance between any two nodes in a small-world network (Watts, 1999). This weakly coupled network provides network members with multiple groups to join. Decentralized power and the possibility of choices encourage members in a larger network to act proactively and voluntarily. Competition among various circles incentivizes a circle leader to pay more attention to interests outside the circle, rather than only within the circle. Otherwise, selfish behavior will provoke other circles into fighting back. While circle members conduct extra-role performances not only for the circle's interests but also for the benefits of the larger network, all workers, no matter in which position, will feel the pressure of the organizational climate (Bolino, Turnley, Gilstrap, & Suazo, 2010), and extend their citizenship behavior (Bolino & Turnley, 2003).

The existence of various circles with bridges is very helpful in group creativity (Uzzi & Spiro, 2005) and the spread of new knowledge (Krackhardt, 1996), since shorter average distance improves communication in the network. By the same token, bridging ties help various circles open up to each other, which creates a climate conducive to open and direct communication within an organization, and results in higher levels of citizenship behavior (Kopelman, Brief, & Guzzo, 1990). The fourth hypothesis follows on from this:
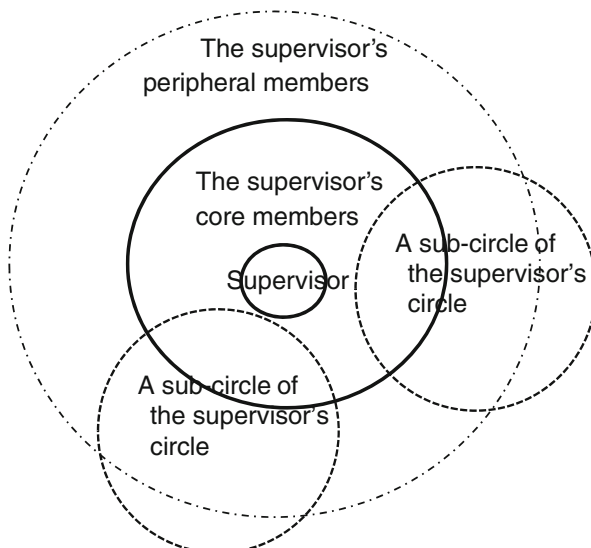


**Fig. 3** The diagram of highly-centralized structure of *guanxi* circles

**Hypothesis 4** The existence of bridges connecting various *guanxi* circles results in the larger network having a higher level of organizational citizenship behavior.

## Methods

### Data collection

In total three enterprises were selected for the research samples. M company is a Taiwanese hi-tech computer products manufacturer with its headquarters in Suzhou; B holding company has a business scope that covers chemicals, real estate, and investment. Altogether it has more than 700 employees with more than 20 subsidiaries. The third company (Z group) is a Beijing based company that deals in financial investment, electronic payment, and gold products. In total it has over 200 employees.

Since we need a company with a "healthy" network structure, we conducted qualitative, in-depth interviews before the quantitative survey started. The above companies had formalized management systems and were highly competitive within their respective fields.

The first target of research was the head office of the Taiwanese high-tech manufacturer based in mainland China. This world famous computer parts producer was selected as it has a well-organized management system and business environment, which results in a very competitive organization. In total, we collected data from 21 departments and made contact with 528 workers. The response rate for each department was 85–100%. The number of employees in each department ranged from 14 to 56, with an average of 24.9 members (s.d. = 11.96). If an interviewee left over 20% of the network questions blank then his or her data was coded as invalid. If more than 20% of the survey data was invalid, then this department was discarded. In total, 18 departments with 411 questionnaire were classed as valid. One of B group's subsidiary companies (involved in real estate) with 56 valid cases, was also selected for this study. One department in Z group's financial company with 31 valid cases was included in the analysis.[2]

During the questionnaire design phase, we used whole network questions that captured information about mixed ties, as *guanxi* can be defined as the mix of expressive and instrumental ties. This questionnaire was adapted for Chinese users based on research by Luo (2011), so that we could compute *guanxi* circles. An OCB-O questionnaire adapted to China was also employed (Farh et al., 1997). A preliminary test of the questionnaire was conducted on 60 employees in the Taiwanese high-tech manufacturer. At the same time, three senior managers were invited for in-depth interviews in order to understand relevant domain knowledge. In the end, we developed a questionnaire with good reliability and validity for this study.

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[2] The term "supervisors" in the following indicate the department heads in M Company and Z group's financial company and the CEOs of the two companies in B group.

## Measurement of independent variables

### Circle members' role

There are five in-circle roles related to the structure of an organization. To compute them, we used a whole network questionnaire to collect network data on mixed ties. This is shown in Table 1 (Luo, 2011).

We then used UCINET6 (Borgatti, Everett, & Freeman, 2002) for computing circles. First, we erased ties between two people who do not recognize each other as mixed ties. For instance, A recognizes mixed ties with B, but B denies having such ties with A. The result is saved as Data Set 1.

In the second step, a department supervisor is taken as the centered ego and those with a one-step distance from the ego-center are selected in Data Set 1. They are coded as the supervisors' core members (supervisor's core). In this system, the rule of 3 is adopted. Those only 1-step from the supervisor in more than 3 out of 5 mixed ties network questions are included in the supervisor's core. We then searched for circle members with ties 2-to-3-steps from the centered ego. They were labeled as the supervisors' peripheral circle members (supervisor's peripheral).

In the third step, the supervisor's core was removed from Data Set 1, and the result was saved as Data Set 2. The next step involved computing components larger than 3, and then located people with the highest degree of centrality in each component. These people were then coded as informal leaders. Similar to the second step, core members of an informal leader were identified in Data Set 2 and labeled as informal leader's core members.

In the next step, we calculated betweenness centrality in Data Set 2, and identified those not in the supervisor's core, but with betweenness centrality in the highest 10% of the department. They are coded as bridges.

In the final step, all of these four categories are taken as "in-group members," and anyone else who does not fit in the above categories were coded as outsiders.

Existence of bridges among circles: A dichotomous variable was made where if a bridge exists between circles it is coded as 1, and coded as 0 when there is no bridge between two circles.

**Table 1** Questions of mixed ties in whole-network survey

|  | Dept. 1 | | | | Dept. 2 | | … |
|---|---|---|---|---|---|---|---|
|  | A1,A2 | A1,A3, | … | A32,A33, | B1,B2, | … | B26, B27 |
| 1. Whenever I learn new knowledge concerning jobs, I would like to teach him or her. | | | | | | | |
| 2. I am willing to lend my 1 month salary or more to him or her. | | | | | | | |
| 3. I am willing to share a new thought with him or her. | | | | | | | |
| 4. If he or she asks, I would like to help his or her friends. | | | | | | | |
| 5. I like to introduce him or her to my friends. | | | | | | | |

## Measurement of dependent and control variables

### Organizational citizenship behavior

OCB-O questionnaire items are based on work by Farh, Podsakoff, and Organ (1990). Principal axis factor analysis was used in our preliminary test of the OCB-O questionnaire, so as to remove questions with low factor loadings; this left the six questions shown in Table 2. This table also shows goodness of fit information (CFA): GFI = .92, AGFI = .82, CFI = .92, and NFI = .91.

### Control variable

Previous research illustrated the significant effects of personal characteristics, such as age, seniority, gender, and educational background on OCB (Farh et al., 1997). Organ (1977) showed OCB-O is the mediator between job satisfaction and performance. Referring to the job satisfaction questions from Cammann, Fichman, Jenkins, and Klesh's (1979) paper, principal axis factor analysis in a preliminary test was used to generate an index of job satisfaction. Therefore age, gender, education, tenure, and job satisfaction are included in our explanatory model as controls.

## Analytical results

### Correlation analysis

Table 3 shows the mean, standard deviation, and correlation coefficient of individual-level and group-level variables. Correlation analysis shows that OCB is positively correlated to job satisfaction ($r = .34$, $p < .001$). The comparisons among individuals' position in a circle structure (i.e., In-group members vs. Outsiders, Supervisors' peripheral vs. Supervisors' core, and Bridges vs. Supervisors' peripheral) all show

**Table 2** Confirmative factor analysis of organizational citizenship behavior toward organizations

| Items | Factor loading | Goodness of fit | AVE | CR |
|---|---|---|---|---|
| 1. I would do my best to defend the company's reputation and actively participate in relevant activities. | .65 | $\chi^2 =$ 115.01 | .52 | .86 |
| 2. I would actively introduce the merits of the company to others or clarify others' misunderstanding about the company. | .79 | $df = 9$ $p = .00$ | | |
| 3. I would actively participate in the meetings in the company. | .81 | $\chi^2/df =$ 12.78 | | |
| 4. I would actively communicate with my colleagues. | .61 | RMR = | | |
| 5. I obey the company's rules, even though there is no one noticing or no record for reference. | .71 | .05 GFI = .92 | | |
| 6. I work hard and seldom make mistakes. | .72 | AGFI = .82 CFI = .92 NFI = .91 | | |

significant positive correlations ($r = .17$, $p < .01$, $r = .13$, $p < .05$, and $r = .17$, $p < .05$) with OCB.

### Regression and HLM (hierarchical linear modeling) analyses

Table 4 shows the results of the regression and HLM analysis. In Models 1 – 3 (main independent variables are "In-group members vs. outsiders," "Supervisors' peripheral vs. Supervisors' core," and "Bridges vs. Supervisors' peripheral"), the results show that the independent variables have significant effects on OCB-O ($\beta = .12$, $p < .001$; $\beta = .14$, $p < .05$; $\beta = .13$, $p < .05$) after controlling for demographic characteristics and job satisfaction. The results show support for H1, H2, and H3. In Model 4, the department-level variables (Existence of bridges among various circles), shows that there are significant prediction effects ($\beta = 1.8$, $p < .05$) on OCB-O after controlling for average demographic characteristics, job satisfaction, and department size. This result confirms H4.

## Discussion

### Key findings

Hypothesis 1 stated that in-group members, including all circle core and peripheral members, have higher OCB-O than out-group members, which corresponds to LMX theory. Hypothesis 2 shows that a supervisor's peripheral members' OCB-O is higher than core members', and our theory suggests that peripheral members engage in favor exchanges with more people to actively signal their loyalty and hard-work ethic. Testing Hypothesis 3, findings show that bridges have even higher OCB-O than a supervisor's peripheral members. Bridges participate in favor exchanges with no less than two circles, which requires a harmonious organizational climate, otherwise group conflicts may negate a bridges' functions. So they have the best OCB-O in order to maintain the harmony of the whole organization.

To summarize the results stated above: People who engage in more favor exchanges, actively signal their strong work ethic, and bridge various groups have more OCB-O than those who do not. We thus take OCB as extra-role performances benefiting the whole organization, no matter whether the motivations behind these behaviors are altruistic or selfish. However, the assumption for this type of behavior is that individuals' favor exchanges align with organizational interests. Hypotheses 4 was formulated to examine organizational network structure.

In a weakly coupled structure (Granovetter, 2002), a network is not too closed and dense, but there are also bridges connecting different circles. The data confirm Hypothesis 4, so that the existence of bridges among various circles is important for a healthy network structure, in which average OCB-O is generally high.

### Key implications

Social exchange is rational and self-interest driven (Hardin, 2001). Long-term frequent and wide-ranging social exchanges, (or favor exchange in the Chinese society), are likely to benefit the whole organization, regardless of their motive. However, there is a

**Table 3** The descriptive statistics and correlations for the dependent and independent variables

| Variables | Mean | s.d. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Individual level | | | | | | | | | | | |
| 1. Age[a] | 27.89 | 5.71 | (n/a) | | | | | | | | |
| 2. Tenure[b] | 32.09 | 30.67 | .70*** | (n/a) | | | | | | | |
| 3. Gender[c] | .59 | .49 | .14** | .07 | (n/a) | | | | | | |
| 4. Education[d] | 3.93 | .42 | −.20*** | −.24*** | .06 | (n/a) | | | | | |
| 5. Job satisfaction | 4.69 | .90 | .19*** | .12** | .02 | −.05 | (.87) | | | | |
| 6. In-group vs. Out-group[e] | .70 | .46 | .13** | .16*** | −.03 | .01 | .12** | (n/a) | | | |
| 7. Supervisor's peripheral vs. Supervisor's core[f] | .65 | .48 | −.18*** | −.14* | −.07 | −.16* | .00 | (n/a) | (n/a) | | |
| 8. Bridges vs. Supervisor's peripheral[g] | .28 | .45 | .15* | .09 | −.11 | −.02 | .12 | (n/a) | (n/a) | (n/a) | |
| 9. OCB | 5.86 | .74 | .20*** | .13** | .01 | −.09 | .47*** | .17** | .13* | .17* | (.84) |
| Group level | | | | | | | | | | | |
| 1. Department size | 24.00 | 10.34 | (n/a) | | | | | | | | |
| 2. Existence of bridges | .40 | .50 | .17 | (n/a) | | | | | | | |
| 3. Circle ratio | .09 | .03 | .07 | .36 | (n/a) | | | | | | |

For individual level correlations, $n$ is from 163 to 498. For group level correlations, $n = 20$. Reliability coefficients are shown in diagonal cells in parentheses. *$p < .05$, **$p < .01$, ***$p < .001$, two-tailed tests

[a] Age was measured in years. [b] Organizational tenure was measured in months. [c] female = 0, male = 1. [d] Under high school = 1, high school = 2, college = 3, under graduate = 4, graduate = 5, PhD = 6. [e] In-group (including Supervisor's core, peripheral, bridge, and informal leaders' in-group members) = 1; Out-group = 0. [f] Supervisor's peripheral = 1; Supervisor's core = 0. [g] Bridges = 1; Supervisor's peripheral = 0

**Table 4** Analytical results of OCB-O hierarchical linear models

| Variables | M1 | M2 | M3 | M4 |
|---|---|---|---|---|
| Individual level | | | | |
| Intercept | | | | 5.84*** |
| Age | −.02 | .17* | .07 | −.00 |
| Tenure | −.05 | −.03 | −.01 | .00 |
| Gender | −.02 | .00 | .01 | −.01 |
| Education | −.01 | −.09 | −.13* | .01 |
| Job satisfaction | .33*** | .37*** | .34*** | .32*** |
| In-group vs. Out-group | .12*** | | | |
| Supervisor's peripheral vs. Supervisor's core | | .14* | | |
| Bridges vs. Supervisor's peripheral | | | .13* | |
| Group level | | | | |
| Department size | | | | .01* |
| Existence of bridges × circle ratio | | | | 1.83* |
| $R^2$ | .13*** | .20*** | .16*** | |
| F | 13.18 | 10.96 | 8.03 | |
| df | 6/498 | 6/239 | 6/213 | |
| Model deviance | | | | 996.92 |

For individual level, $n$ is from 213 to 498. For group level, $n = 20$. Entries are estimations of the fixed effects with robust standard errors. In all models, all variables are grand-mean centered. Reported coefficients are unstandardized. *$p < .05$, **$p < .01$, ***$p < .001$, two-tailed tests

puzzle: how do private social exchanges centered around personal interests eventually cause behavior that benefits the whole organization?

Paradoxical thinking can be used as a metaphor for balancing a Chinese worker's particular and universal concerns. This is the dynamic process ruled by the Chinese thinking of "Yin and Yang" (Chen, 2008; Li, 1998, 2008) to make *guanxi* circles function. The concept of Yin and Yang can be defined as "each element consists of opposite sub-elements that mutually affirm as well as mutually negate, so that it has to be studied as unity-in-opposites" as defined by Li (1998). It can also be called the "transcending paradox framework" (Chen, 2008).

A circle leader's actions can be interpreted using the concept of "Yin and Yang," whereby the leader often engages in favor exchanges with his or her members in order to maintain the cohesion of an in-group circle, while also expanding an ego-centered social network and cultivating trust in a larger network. In doing this the leader needs to maintain the principle of equity at work (Hwang, 1987). An additional incentive for the leader is that their career will be more successful, the greater the leader's connections with the larger network are. However, he or she may have to deal with feelings of poor treatment within his or her own small circle. Maintaining harmony in a larger network may conflict with maintaining the interests of a small circle.

Long-term *guanxi*-oriented thinking is a unique feature of *guanxi* circles. While engaging in very long-term exchanges, calculation of short-term self-interest cannot hedge all risks. In the long-term dynamic process, successful favor exchanges cause a

Chinese actor to avoid near-term conflicts between their personal circle and the larger network, and leaves room for balancing interests from both inside and outside their circle in the future. In a weakly coupled structure, most workers, especially circle leaders, encourage behavior benefiting circles and the larger network at the same time. This maintains harmony and carries the possibility of being able to mobilize the larger network in the future. This situation makes long-term self-interest driven favor exchange compatible with organizational benefits.

Leadership plays a key role in transferring trust from personal to integrated bases (Li, 2008). LMX mainly covers vertical working relations in dyadic domains, and is measured by psychological questions. The concept of a *guanxi* circle extends the current research from dyadic to network domains, and is measured by a network structural indicator—proximity to the leader, which is highly correlated to, but not the same as LMX. In brief, *guanxi* circles are concerned with not only vertical but also horizontal relations in a larger network—that is, the relations among circle leaders. We find that a circle leader good at balancing the interests between in-group and out-group members will transform personal exchanges into benign behavior that benefits the larger network. Under this kind of leadership, OCB-O and bridging behaviors are encouraged, creating a weakly coupled network structure with a high average OCB-O.

## Limitations and future research

This study still has several limitations. First, this research does not take into account the ways different leadership styles can determine the degree of OCB-O. Different network structures caused by various leadership styles will have differing levels of influence on OCB-O. For example a leader favors competitive behavior and thus creates a segmented network where *guanxi* circle members' cooperative behaviors are stressed. This will result in the tension between moral leadership and organizational performance. Leadership styles could be included in future research on citizenship behaviors in a circle so as to clarify the conditions for OCB-O in Chinese organizations.

Second, only one OCB-O is discussed in this study, which ignores the multiple dimensions of OCB raised in other literature. For instance, Farh, Zhong, and Organ (2004) divided OCB into self, group, organization, and social fields. Future research could investigate the effects of an organization member's role in a circle structure on escalating citizenship behaviors in his or her social life. One possible research direction could be looking at how a person's role changes in a *guanxi* circle affect his or her multiple dimensions of citizenship behavior.

Third, the circle computation identifies the supervisor of a department as the center of power, and all other high-centrality people outside the supervisor's circle core are regarded as informal leaders. However, informal leaders are sometime even more important than their formal supervisors. These special cases were not included in the circle computation, and are left as a challenge to future studies.

Moreover, several important dependent variables, such as resignation, employee performance, employee satisfaction, and organizational commitment, could be included in future research concerning the effect of circle phenomenon on organizational behavior. In addition, the effects of organization type (governments, non-profit organizations, state-owned enterprises, etc.) and industry on circle phenomena also deserve our attention. This study uses a structural approach, but the evolution of a network

could also be another potential research direction, with analysis beginning from the perspective of network dynamics.

Network researchers have done their best to study the effects of structure on behavior, this study also uses networks to investigate organizational behavior. But here causality is not unidirectional, from network to OCB-O. Other research has shows how behavior can also influence *guanxi* networks (Brass, 1995; Brass & Burkhardt, 1993). The relationship between structure and behavior is a dynamic process: The structural position of a circle affects citizenship behavior and individual performance; while organizational behavior can also influence people's perception of roles, which then brings about changes in the structural position of a circle, resulting in structural changes in the whole network. The dynamic evolution and interaction between organizational behavior and *guanxi* network is worth studying in the future.

Finally, this study is a cross-sectional study. Future research could work with longitudinal data in order to better confirm the causality between circle phenomena and various organizational behavior.

## Conclusion

By empirically testing the four different hypotheses, findings show that a person that bridges two or more circles has higher OCB-O than a member of the supervisor's circle. Within a circle, a peripheral member has higher OCB-O than a core. These findings highlight the fact that a higher number of exchange relations encourages more extra-role performance. Another question posed in the beginning of this paper was: While extra-role behavior benefits both partners in a *guanxi* relationship (which is mainly conducted based on reciprocal exchanges for personal purposes), how can these behaviors benefit the larger network and the members' of a supervisor's circle at the same time? Findings show that the average OCB-O is high in a weakly-coupled structure, that is, a network with many bridges connecting various circles. In this structure, a circle leader, especially a supervisor, takes the interests of the whole organization to heart; allowing him or her to maintain long-term frequent exchanges with in-group members and harmonize with the larger network at the same time. Therefore extra-role behaviors benefiting the whole organization are encouraged in favor exchanges with circle leaders.

Social networks are the mediators between micro-level and macro-level behavior (Granovetter, 1973). In organizational research, many studies have shown how individual actions are integrated into various collective behaviors within different network structures (Granovetter, 1978; Krackhardt, 1996; Watts, 1999). Furthermore, there is a lot of excellent research illustrating how collective forces influence an individual via his or her network (Hoegl, Parboteeah, & Munson, 2003; Powell, White, Koput, & Owen-Smith, 2005; Roger, 1995). This paper puts forward the argument that paradoxical thinking by circle leaders may influence network structure, and confirms that a weakly-coupled structure positively impacts a network members' individual OCB-O. In this network structure, the more exchange relations one person has, the higher OCB-O he or she gets.

There is a series of good Chinese behavioral studies on topics such as favor, *guanxi*, and differential modes of association, which further elaborate Chinese paradoxical thinking. Chinese people have various types of ties, that is, family, familiar, and acquaintance ties, which are related to the various rings of a guanxi circle (core, peripheral, and

outsider). Chinese *guanxi* is distinguished by its mixture of expressive and instrumental ties, and *guanxi* circles are measured by the survey questions that refer to mixed ties. Favor exchanges play a key role in the successful operation of a *guanxi* circle, but these inter-personal exchanges may conflict with the concerns of a wider organization, and this constitutes our main question: "How does private social exchange mainly for personal interest eventually result in extra-role behaviors that benefit the whole organization?" The balance between interests both within and outside the circle as well as a healthy network structure help to answer this question. In a weakly-coupled network, if a circle leader is concerned about harmony between their personal *guanxi* circle and the larger network, he or she will encourage his or her members to have a higher OCB-O, which may benefit both the small circle and the whole organization at the same time.

When the role of social networks are ignored, researchers often dichotomize collective and individual perspectives into two opposing forces, as well as viewing expressive and instrumental exchanges as two opposing motivations. Social network studies and dynamic balancing processes play an important role in overcoming the balkanization of these two perspectives. *Guanxi* circle phenomenon is one of the main structural outcomes of these special behaviors, and deserves more attention from future research.

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