**How to compute guanxi circle**

**Step I:**

Using the following whole-network questionnaire to survey a team, a department or an organization.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Dept. 1 | | | | | | | |
| A1 | A2 | A3 | A4 | A5 | A6 | A7 | … |
| 1) I am willing to share a new thought with him or her. |  |  |  |  |  |  |  |  |
| 2) I am willing to lend 1 month’s salary or more to him or her. |  |  |  |  |  |  |  |  |
| 3) If he or she asks, I would like to help his or her friends. |  |  |  |  |  |  |  |  |
| 4) I am involved in social activities (like shopping, dining, etc.) with him or her after work. |  |  |  |  |  |  |  |  |
| 5) Whenever I learn new knowledge concerning jobs, I would like to teach him or her. |  |  |  |  |  |  |  |  |

Note:

1. The first name of a department (or a team or an organization) should be the head, i.e. the highest rank manager in the department. A2, A3, A4, et, al. are the other department members.

2. The questionnaire should distribute to all department members. If the head rejects to answer, then it is impossible to compute guanxi circle. If there are more than 20% missing, then the network analysis of the whole department will be invalid.

3. We use the 5 questions which ask from respondents. Please refer to the article in Appendix: **The Measurement of Guanxi Circles—Using Qualitative Study to Modify Quantitative Measurement.**

**Step II:**

Coding the whole department’s survey into the data form as follows:

Question (for example): I am willing to share a new thought with him or her.

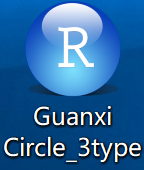
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 丁X | 余X | 李X | 王XX | 周XX | 殷X | 张X | 牛XX | 续X | 沈X | 罗XX | 韩X | 樊X | 涂XX | 何X | 周X | 姚X | 王X | 倪XX | 冯XX | 谢X | 张X | 李XX | 徐XX | 徐X |
| 丁X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 余X | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 李X | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 王XX | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 周XX | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 殷X | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 张X | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 牛XX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 续X | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 沈X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 罗XX | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 韩X | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 樊X | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 涂XX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 何X | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 周X | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 姚X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 王X | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 倪XX | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 冯XX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 谢X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 张X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| 李XX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 徐XX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |
| 徐X | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |

Note:

1. “1” indicates the “yes” for the relationship between the respondent and another department member, while “0” means “no”.
2. The first name, 丁X, is the head of the department.
3. If the questionnaire has 5 questions, then the coding result will have 5 spreadsheets as shown above.

**Step 3:**

Running the following program to compute the three roles in a guanxi circle. You may download the program on this website.



**Note:**

1. **The computation process is as follows:**

Step 1: Collecting whole-network data by using Question 16, 17, 15, as shown in the first table of Table 3.

Step 2: Identifying the supervisor as node i.

Step 3: Computing the five questions’ normalized Gji by using the following formula:

, for all k ≠i or j.

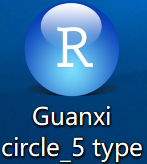
Step 4: Computing the arithmetic average of the five question’s Gji

Step 5: Identify the “cliffs” in the rank of normalized Gji computed from the five networks.

Step 6: Categorizing each actor into various roles in the supervisor’s guanxi circle.

1. **Running the following program to compute the five roles in a guanxi circle** (Generally speaking, there must be more than 400 respondents in the survey, otherwise the role of bridge will have very few cases).

You may download the program on this website.



Note: The computation process is as follows:

Step 1: Collecting whole-network data by using Question 7，9, 10, 12, 13 as shown in the first table of Table 3.

Step 2: Identifying the supervisor as node i.

Step 3: Computing the five questions’ normalized Gji by using the following formula:

, for all k ≠i or j.

Step 4: Computing the arithmetic average of the five question’s Gji and the five matrixes of the question, if the connections of the two members exist in two questions or more than two questions, the two members are considered have a connection, the value of the average matrix is 1, or the opposite is 0.

Step 5: Identify the “cliffs” in the rank of normalized Gji computed from the five networks.

Step 6: Categorizing each actor into core and peripheral roles in the supervisor’s guanxi circle.

Step 7: The supervisor is removed from Data Set 1, and the result was saved as Data Set 2.

Step 8: 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. Then finding the members in Data Set 2 who has only 1 step (the connections of the two members exist in two questions or more than two questions, the two members are considered have a connection) to the informal leader, circle members of an informal leader were identified and labeled as informal leader’s core members.

Step 9: Those who exist in both the supervisor’s core member or peripheral member and an informal leader’s circle member are coded as bridges.

Step 10: 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.

Step 11: Categorizing each actor into various roles in the supervisor’s guanxi circle.

1. **Exceptions:**

It is possible that the head of a department makes no differential treatments to the members, so that we can’t find cliffs in the step 4. In such a case, we can’t find the various roles of guanxi circle.

**Appendix:**

**The Measurement of Guanxi Circles—Using Qualitative Study to Modify Quantitative Measurement[[1]](#footnote-1)[[2]](#footnote-2)**

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Cheng, Meng-Yu, and Fu, Xiao-Ming[[4]](#footnote-4)

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**Abstract**

This article illustrates an integration of qualitative and quantitative evidence in a network analysis using Chinese guanxi circles as an example. We first conducted various qualitative studies: collecting second-hand data, noted field observations, in-depth interviews, and informal surveying of all workers with open questions, to classify all actors by roles in guanxi circles that were centered on the organization’s supervisor. This is the “ground truth” used for testing the accuracy rate of our various methods of quantitative measurement. We then computed a measure of guanxi proximity (Gji) by which we further classified individuals into guanxi roles using quantitative methods. By comparing the quantitative results with the “ground truth”, we found the five best questions in our survey for sorting people into guanxi roles and a preferred measurement of guanxi proximity.

## Introduction: Methodological and Theoretical Questions

We begin with a workplace phenomenon in which a supervisor categorizes his staff into in-group and out-group members, using different rules of social exchange with the different groups. This phenomenon is called Leader Member Exchange Theory (in brief, LMX theory, Graen & Cashman, 1975; Graen 1976; Sparrowe & Linden, 1997). However, differentiating between in-group and out-group members is a difficult methodological problem. Our methodological question is: “can we find a method to categorize in-group and out-group members?” Our theoretical question is: “are there only two types of subordinators in the mind of a supervisor? Or, are there more than two categories?”

LMX theory argues that the strength of relationships increases over time (Graen 1976). Relationships between supervisors and their subordinates foster different levels of interpersonal trust through tangible and intangible social exchanges (Dienesch & Liden 1986). For example, subordinates actively repay and generously share resources with their supervisor in a high-quality exchange relationship, whereas a low-quality dyadic relationship involves only formal and in-role interactions (Blau 1964). In-group members with strong relationships not only have cooperative working ties, but also intimate and loyal relations with their supervisor which results in higher job satisfaction and lower turnover rates than out-group members (Graen & Uhi-Bien, 1995). In addition, in-group members are more likely to receive emotional support, trust, and empowerment, which bring about better performance and higher evaluation, and in turn increase the quality of the relationship with the supervisor.

LMX indicators are composed of a series of attitude questions, such as “I like the personality of my supervisor”; “It’s very pleasant to work with my supervisor;” “I enjoy talking with my supervisor,” etc…, which in general adopt Likert’s seven-point scale for measurement (Dienesch and Liden, 1986; Graen and Uhl-Bien, 1995; Schriescheim et al, 1999). Each subordinate is assigned an LMX score, and this score determines their position in a continuum from outer ring to most intimate group of the supervisor of the organization. Thus, the methodological question becomes: “can we find a method to draw a line between the in-group and out-group in this continuum?”

We begin with three characteristics to distinguish leader-member relationships in China. As sociologist Fei (1992) called “the differential mode of association” (in Chinese, cha xu ge ju), a Chinese ego-centered network is composed by multiple layers of rings, in which different behavioral and moral standards are applied for each of these different layers of guanxi. At the core of the ego-network, family-ethics is the base for a Chinese person to build and maintain his or her guanxi (Bond and Hwang, 1986; Chua, R., Ingram, P., & Morris, M. 2008; Chua, et, al, 2009; Liang, 1983). Based on family ethics, the inner most ring of a Chinese ego-centered network is called a “family tie”, which includes real- and pseudo-family ties (Yang, 1993; Luo, 2011). An important feature of Chinese guanxi is its moral requirement of obligation (Mao, Peng and 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). On the contrary, a “reciprocal tie” requires both sides to take long-term but limited responsibilities.

Adjacent to the core, there is a special type of guanxi named after “familiar ties” (Yang; 1993; Luo 2005), which form the most important part of a Chinese person’s ego-centered social network. Familiar ties in Chinese society are a type of strong tie, since they involve not only reciprocal exchanges but also intimacy and emotional support. Similar to Yang’s argument of family-ethics, Bian (1995; 2015) separated strong ties into two categories, family members and general strong ties, in studying guanxi favoritism.

In Chinese particularistic society, “the rule of favor exchange” (Hwang, 1987; 1988) that guides familiar ties introduces a kind of quasi-collective behavior not true of the outer most ring, the third category of relationships (stranger ties in Yang’s categorization). However, such familiar ties are still in reality instrumental exchange relations, so self-interest and calculative rationality are central elements in this category. Conducting long-term favor exchanges is the basis of mutual interactions between “familiar ties” (Yang, 1993). Hwang (1987; 1988) also divided Chinese guanxi into three categories. The term “rule of need” is used to explain the exchange principle of “expressive ties”. In long-term social exchanges, Chinese people often mix up expressive and instrumental motivation in “mixed ties” by following what Hwang called the “rule of favor exchange”. The third category in Hwang’s (1987) classification is “instrumental ties”, which follow the “rule of equity”. The outer most ring of guanxi is composed by purely instrumental ties. They could also be called “utilitarian ties” (Zhang and Zhang, 2006).

Since many Chinese social scientists argue that there are three categories in Chinese guanxi, we begin by looking for three layers in a supervisor’s guanxi circle in the Chinese workplace.

## What is a Guanxi Circle in an Organization?

Guanxi circles are actually pseudo-families in a person’s working life, and at work usually develop from ego-centered social networks around one focal person. That is why a guanxi circle can be formed around a particular person, for example a Director’s circle or President’s circle. Power is the key to understanding a guanxi circle, since it is required to mobilize resources for carrying out a series of actions and exchanging favors among members. Most Chinese workers wish to build up their own guanxi circles, but only those with formal power or informal influence turn their ego-centered networks into circles that act as significant stakeholders in an organization.

The main guanxi circle in a workplace is generally centered on the supervisor at the highest level. Other circle leaders derive their power from the supervisor; their guanxi circles are thus subsets of the supervisor’s. In other words, a guanxi circle of this sort has a tree-like structure in which a large circle contains several smaller circles. Some circles are independent from the main circle but have bridging ties to maintain a connection with the latter. However, some are comparatively closed groups that do not overlap with the other circles. A whole network diagram of a workplace full of guanxi circles is shown in figure 1. Guanxi circles often make a Chinese workplace a fragmented network structure.

In general, a guanxi circle is centered on a powerful formal or informal leader, with a network structure of differential modes of association (Fei, 1992). Several rings of social ties like ripples expanded from the center’s family members to the most intimate friends, then to familiar ties and finally to weak ties. The nature of differential modes of association makes a Chinese leader categorize his or her staff into in-group and out-group members. He or she further divides the in-group members into circle core and peripheral members. Therefore, there is always an inner core surrounded with peripheral members in a guanxi circle.

The concept of guanxi circles is similar to action sets (Mayer, 1966) rather than a closed group or an association. A guanxi circle is not a closed group, because it is ego-centered and loosely organized without fixed membership. The concept of “set” refers to a group of people, all whom have ties with the focal person (Barnes, 1954). An action set comprises social connections intentionally mobilized by its focal person, who aims to carry out a series of actions for an individual or collective goal. That is, as a type of action set, guanxi circles are characterized as being groups that include only two types of strong ties in the Chinese cultural context: family ties, including family and pseudo-family members, as well as very good friends, or familiar ties in Yang’s (1993) terms. Weak ties, as well as strangers, are excluded as outsiders. In addition, guanxi circles carry out a series of ongoing actions, such as finishing tasks, achieving the objectives of the circle or organization, competing for resources for one’s own use, expanding its scale, and increasing its influence, etc.

The ring of pseudo-family ties (Yang, 1993) makes up the core of a guanxi circle, which is characterized by loyal and intimate relationships, similar to those of family members. This core may be called the “basic team” (Chen, 1998) or “confidants” (Chi, 1996), since it is the basic force and most intimate relation for the person at the center.

Outside the core, peripheral circle members are mainly composed of long-term relations with limited liability in frequent social exchanges. These members follow the rule of familiar ties when exchanging favors (Hwang, 1987). This ring is the interface between the core and the outside world. Their guanxi practices are more flexible and open than the core’s, but much stronger in mobilizing resources than weak ties. Since the social ties of this sort can be suspended, broken up, and repaired, a circle leader has much more room for guanxi manipulation, and he or she may move peripheral members out and put outsiders in, according to the situation.

Flexible guanxi operation usually makes a guanxi circle’s boundary open. In this dynamic process, a guanxi circle may absorb outsiders into the inner group and also move trustworthy periphery members into the core. The boundaries within and outside a guanxi circle are not well defined and thus there are often overlapping areas among guanxi circles. In other words, there are bridges connecting various circles.

As stated above, a guanxi circle is composed of core and periphery members. However, there is another type of guanxi circle member who is in the overlapping area between two or more guanxi circles and connects these groups. We can call these guanxi circle members “bridges.”

Since an organization supervisor generally has more power and resources, his or her guanxi circle members may enjoy better treatment during favor exchanges. Therefore, we distinguish these members of the supervisor’s guanxi circle from core members in other informal leader’s guanxi circles. Those who don’t belong to any guanxi circle are “outsiders”. Thus, , as described in Figure 1, we categorize Chinese workers into five types:

1. Core members in a supervisor’s guanxi circle

2. Periphery members in a supervisor’s guanxi circle

3. Core members in an informal leader’s guanxi circles

4. Bridges

5. Outsiders.

Figure 1 is about here

***Circle core member:*** Among guanxi circle members, a core is a comparatively closed clique of pseudo-family ties. Core members who have organizational supervisors as the center egos of their guanxi circle are coded as “Supervisor’s core” in the following sections. Those who do not are coded as core members in informal leaders’ guanxi circles, and are denoted as “Informal-leader’s core”.

***Circle peripheral members.*** A guanxi circle is composed of a group of people who at least have familiar ties connecting them to the centered ego. As the theory states above, the boundary is not closed, so new members may be introduced into the guanxi circle by the centered ego or ego’s intermediaries. Those members in a supervisor’s circle who are excluded by cores are coded as “members in the supervisor’s guanxi circles,” who are denoted as “peripheral members”.

***Bridges and outsiders.*** Periphery members who are included in two or more guanxi circles are coded as “Bridges”. Those who are not included in any guanxi circle are coded as “Outsiders”.

This chapter presents a novel comprehensive methodology to quantify guanxi in workplaces, which incorporates both quantitative data and qualitative results in a complementary manner. It works as follows: Firstly, upon the quantitative collection of data from all actors within an organization (or a department of the organization), we compute each actor’s guanxi circle effect, which is the closeness of an actor to his or her supervisor. Then, by using each actor’s guanxi circle effect, we will categorize all actors in a department into core, peripheral members and outsiders centered around the department supervisor. Therefore informal leaders’ circle members and bridges will not be included in this article.

In the following, we will use the methodology described in the “Introduction” of this book to address the questions raised at the beginning of this chapter. That is, we will use qualitative studies to find the “ground truth”, which can be used to modify our quantitative methods of classifying in-group and out-group members. In the several stages of comparison between qualitative and quantitative studies, this book chapter will illustrate the process of picking out the best indicator for measuring a supervisor’s guanxi circle.

## Qualitative Study

#### The Data Collection

To study guanxi circles in a workplace, we choose a real-estate company in a business group as our research site. The business group has about 700 employees and 20 firms, which are split into three industries: chemistry, investment and real-estate. The real-estate company is a good site for our study, since it has a formal organizational structure with obvious boundaries and its organizational chart clearly defines each worker’s position, reporting-line and function. In addition, the business group is owned by a single person, who assigned supervisor ZL as his agent in the real-estate company. Thus, the power structure of this firm is simple: With a clear-cut boundary around the firm, we can accurately survey the whole network of informal relations in this firm, and we can easily identify the center of power and the guanxi rings around the center. In a complex organization with multiple centers of power, it will be more difficult for us to categorize each worker’s relational proximity to the various centers. In this kind of exploratory research, a firm with a simple organizational structure, such as the real-estate company in the business group, is a good sample.

#### The Qualitative Study

A qualitative study was conducted from the beginning of 2012 to the end of March 2012, as shown in Table 1. It includes four types of studies:

1) We collected and analyzed second hand data, including employee information, organizational charts, various arrangements of formal institutions, job descriptions, and codes of behaviors, etc.

2) One research assistant, under the guise of an intern student, conducted observations in formal or informal arenas, such as formal business meetings, discussion forums, dinner banquets, lunch meetings, and off-duty social activities, etc. A diary of everyday observations was recorded, and is used as raw data for analysis.

3) This research assistant adopted a probing manner during conversations with his colleagues, so that he could deeply understand the social activities, social relations and network structure in the firm.

4) Two research assistants interviewed many employees with a semi-structured questionnaire. Each interview lasted for half to two-and-half hours, and many interviewees were interviewed twice. Most of interviews were allowed to be recorded, since we guaranteed the anonymity of interviewees. Overall, 31 out of 60 employees in this company were included in our interviews.

Table 1 is about here

During this qualitative study, we used the following three methods to identify each actor’s role in supervisor ZL’s guanxi circle:

1) A senior researcher in the research team directly asked ZL to name people in his circle.

2) The research assistant interviewed some expert informants--those who have more precise knowledge about social relations in the firm, such as secretaries and people active in after-work social activities, and asked them to draw a picture of the network structure of the firm.

3) The research team analyzed the raw data from our observations and interviews to find out the structure of the guanxi circles, such as the people who have dinner with ZL, are involved in off-duty social activities with the supervisor, get special jobs with ZL’s trust, etc.

From the qualitative studies as shown above, we eventually compiled a list of the guanxi circle roles of each actor. While some actors are easily categorized into the supervisor’s “circle core” or “circle peripheral," others are not easily identified as a certain role. For example, some coded as “marginal members” of ZL’s circle are probably outsiders; some supervisor’s peripheral members are also core members in an informal leader’s circle, and they are probably bridges. We thus need more information to help identifying all actors’ roles.

#### C. The Quantitative Study

In the last week of March 2012, the whole research team entered the research site to conduct a series of interviews with high-ranking officers and do quantitative survey with all employees in the company. The questionnaire includes 18 whole network question items covering four dimensions: friendship ties, instrumental ties (Krackhardt, 1992) and trust relations (Mishra, 1996), as well as mixed ties combining expressive and instrumental motivations (Hwang, 1987; Luo, 2011). Each question forms a network. In these 18 networks, only those friendship- and mixed-tie networks show a high association with guanxi circle measurement, since guanxi circle in theory is involved with expressive feelings. Ten theoretically relevant guanxi circle specific questionnaire items are listed in Table 2.

Table 2 is about here

We collected the data from all 60 employees in the firm, but 3 employees gave invalid data. So, in total we had 57 valid cases. Finally, UCINET was used to draw the pictures of the 10 whole networks. We found that no marginal members have direct symmetric ties to ZL and his core members, but have some ties to his peripheral members. Four of them have a dense network with those circle members, while most of them have only one or two ties connected to ZL’s circle. So, the former have a strong indirect connection to the supervisor, and can be classified as “circle peripheral members.”

As shown in Table 3, there are two types of marginal members found in qualitative studies at the margin of the supervisor’s circle. The first is people who are separated by three steps to the supervisor; they are “marginal members”, as above-stated. The second is marginal people embedded in a dense network connected to ZL, and they are classified as a peripheral member of ZL in this article. We further classify the other “marginal members” as “outsiders”.

In another example, some core members in informal leaders’ circles are also peripheral members in the supervisor’s circle, such as LHZ and LL, and they are actually “bridges” between the two circles. They are categorized as “peripheral members” in this study.

Combining the qualitative research results and the supplementation from the pictures of network structure, we get a final classification of each actor’s role in the supervisor’s circle, as shown in Table 3. This list of roles can be taken as the “ground truth” in developing the quantitative measurement of guanxi circle.

Table 3 is about here

The qualitative study has many merits: accuracy, rich information, detailed observations, good judgment of relevant informants, and grounded knowledge collected in the field. However, this method’s limitations are also significant. One of the limitations is the lack of replicability in the field studies make the research results subjective. We thus use the quantitative data to remedy the insufficiencies in the qualitative research.

Another major deficiency of the qualitative study is its high cost. Taking our research as an example, one assistant spent most of his time in a three month period to get the research results from one company. We thus need a method with easy and standardized procedure to measure guanxi circles which can collect data from many research sites in a relatively inexpensive fashion.

## The Measurement of a Guanxi Circle

#### Guanxi Circle Effect

In this section we propose a method to compute network proximity to the core of a Guanxi Circle, Gji. Let variable Zji measure the strength of a connection between actors j and supervisor i: 0 for no connection, 1 for an asymmetric connection from j to i, 2 for an asymmetric tie from i to j, and 3 for reciprocal connections. The following index measures the proximity of person j and supervisor i:

,for all k ≠i or j.

The first term (Zji) measures the direct connection between j and i. The summed term measures connections from j with strong connections to colleagues k, who have strong connections to supervisor i. The combination, Gji, measures the extent to which actor j is central in the guanxi circle around supervisor i. The stronger j’s connection to i, and the stronger j’s connections with i’s closest colleagues, the more central actor j is in the guanxi circle around supervisor i.

However, the indirect effect of a connection ranges from 12 to 46, for the example, in Question 14, while the direct effect is between 0 and 3. So, we propose three methods to reduce the impact of the exaggerated indirect effect in Gji.

1. Divided by 9:

, for all k ≠i or j.

Since the highest number of Zjk×Zki is 9 (3×3), so the sum item is divided by 9. That means, the highest indirect effect via a good friend to connect the supervisor is 1. Thus a person’s total indirect effect is limited to 1.33 to 5.11, a little higher than the direct effect in general cases.

1. Devided by network size:

, for all k ≠i or j.

56 is the effective network size excluding the supervisor, i.e. 57-1. That means, the indirect effect is divided by network size. The larger a network is, the higher the indirect effects of network members are. Thus, it is sufficient to cancel out the impact of network size, and the total indirect effect is limited to 0.21 to 0.82, much smaller than the direct effect.

1. Normalization:

, for all k ≠i or j.

Using normalization, the indirect effect is reduced to between 0 and 3, the same as the range for direct effects.

#### The First Experiment--Choice among Three Indicators

When ranking Gji, a three-stage “hill” is often formed, there are two “cliffs”” which divide all actors into three categories, as is shown in Figure 2. This is a picture of a normalized Gji computed from Question 17. Those in the highest mountain can be classified as core members of ZL’s guanxi circle, those in next lower level are peripheral members and those in the “valley” are outsiders. This helps us categorize various roles in the supervisor’s guanxi circle.

Figure 2 is about here

By using the five covering mixed ties, question 14-18, we computed the three measures of Gji, and averaged them to get a single index of each person’s guanxi circle proximity. By finding the “cliffs”, we categorized all actors into three types of guanxi roles, and then compared them with the “ground truth” obtained from the qualitative study and pictures of network structure.

Table 4 is about here

Table 4 shows the results of the comparison. There are two types of errors. Type I error is denoted by “Type I” in a cell, i.e. this person is categorized into “peripheral member” in qualitative studies, but the computation of Gji doesn’t find the same result. Type II error is denoted by “Type II” in a cell, i.e. Gji classifies this actor into “peripheral” but the qualitative study doesn’t support this conclusion. Those coded as “circle” or “core” in cells are correct results in the quantitative study. At the bottom of Table 4, the summary of a computing method is shown as “2.1.18/21”, i.e. “the number of Type I error. the number of Type II error. the number of correct results / sum of the number of these three categories”. Accuracy rate is computed by the number of correct results divided by the sum. We found that the three methods get very similar accuracy rates, but the normalized Gji is a little better than the other two.

#### The Second Experiment— Choice among 10 Questionnaire Items

In the next step, we use all 10 types of ties to compute their normalized Gji, and compare the results with the “ground truth”. As shown in Table 5, the best item is Question 16, “I am willing to share a new idea with him or her”, and its accuracy rate is 0.863. The second best two questions are: Question 15 “I am willing to lend my one-month salary or more to him or her”, and Question 17, “If he or she asks, I would like to help his or her friends”. Following these three questionnaire items, Question 1, “I am involved in social activities (like shopping, dining, etc.) with him or her after work”, and Question 14, “Whenever I learn new knowledge concerning jobs, I would like to teach him or her”, can be included in the top five questions.

Table 5 is about here

In the comparison between Table 4 and 5, we find that the analytical results from multiple questions are better than those computed from a single questionnaire item. In Table 6, the first column illustrates the result from the best three questions stated above. If a person in two or more out of three questions is coded as a certain role in the supervisor’s guanxi circle, then he or she will be taken as this role. The accuracy rate of this computing method is 0.869. The second column shows the analysis based on the best five questions. If a person in three or more out of five questions is classified in a certain ring around the supervisor, then he or she will be put into this certain category. The accurate rate is as high as 0.863. By using five questions, the accuracy rate is not improved.

Table 6 is about here

## Conclusions and Discussions

To summarize the above-stated computing methods and experiments, we conclude the following steps can be used to distinguish guanxi roles in the workplace:

Step 1: Collecting whole-network data by using Question 16, 17, 15, as shown in the first table of Table 3.

Step 2: Identifying the supervisor as node i.

Step 3: Computing the normalized Gji by using the following formula:

, for all k ≠i or j.

Step 4: Identify the “cliffs” in the rank of normalized Gji computed from the three networks.

Step 5: Categorizing each actor into various roles in the supervisor’s guanxi circle. By using the top three questions, Question 15, 16, and 17, if a person is coded as a certain role in two or more out of the three networks they will be taken as certain role.

There are some flaws in this method of computation for measuring a guanxi circle. The most important one is the incorrect prediction of two people’s roles: WWD and LQP. They are listed in Type I or Type II error in almost all questions and computation methods. WWD is recognized as a circle member by almost everyone, but has a very low Gji. He is senior engineer with a strong technical background and is respected by almost everyone. Because of his age, seniority, expertise and good reputation, ZL consults with him a lot and respects him very much. But he is totally inactive in social life. How to predict the role of this type of person requires more experiments in various ways to find a better computation method.

LQP is densely embedded in an informal leader’s circle, and she has strong indirect connections to ZL through her guanxi network, so she gets a pretty high Gji score, and is classified as a circle peripheral member in the quantitative study. However, she is actually neither close to the supervisor, nor important in function. So she is often recognized by others as an outsider in the qualitative study.

There are many cases like LQP in different networks, which is why Gji computed from some questions has a large amount of Type II error. As stated above, we didn’t develop the method in this book chapter to identify informal leaders’ guanxi circles and check for overlapping areas among various circles, i.e. bridges. It is probable that LQP is a bridge between the supervisor’s circle and her own circle. In future studies, we need to develop methods to identify informal leader’s circle members and bridges, so that the whole picture of guanxi circles in a workplace’s network structure will be clearer.

In this chapter, we add direct and indirect connections to measure proximity to the core of a guanxi circle. If we experiment with some other methods to integrate these two effects rather than simply adding them together, there may be better outcomes. How to better use the two guanxi circle effects to explore more social phenomena in workplaces is a challenge to be addressed in future studies.

This chapter again demonstrates the importance of integrating qualitative and quantitative studies together, as shown in the “Introduction” of this book. For finding a good quantitative indicator of a variable, data mining itself is not enough. Without being supplemented by qualitative studies, data mining cannot achieve “ground truth”.

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**Table 1. The Time of Qualitative Studies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stage** | **date** | **days** | **location** | **Researches** |
| First stage | Jan. 9th —Jan. 13rd 2012 | 5 | The headquarter of B business group | The collection of second-hand data |
| Second stage | Feb. 2nd –Feb. 11st 2012 | 9 | The real-estate company in business group B | Observation in the company |
| Third Stage | March 2nd –March 30th 2012 | 29 | The real-estate company in the business group B | Interview and survey |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Dept. 1 | | | | Dept. 2 | | | … |
| A1,A2 | A1,A3, | … | A32,A33, | B1,B2, | … | B26, B27 |  |
| 16) I am willing to share a new thought with him or her. |  |  |  |  |  |  |  |  |
| 15) I am willing to lend 1 month’s salary or more to him or her. |  |  |  |  |  |  |  |  |
| 17) If he or she asks, I would like to help his or her friends. |  |  |  |  |  |  |  |  |
| 1. I am involved in social activities (like shopping, dining, etc.) with him or her after work. |  |  |  |  |  |  |  |  |
| 14) Whenever I learn new knowledge concerning jobs, I would like to teach him or her. |  |  |  |  |  |  |  |  |

**Table 2. Questions of Guanxi in Whole-Network Survey**

The best five questions (according to the results of experiment 2)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3 ) I will keep contact with him or her even after I leave this job. |  |  |  |  |  |  |  |  |
| 4 ) With whom do you talk about your private affairs during your daily chats? |  |  |  |  |  |  |  |  |
| 5 ) Who can be listed among your best friends? |  |  |  |  |  |  |  |  |
| 9) I think that he or she is concerned about my wellbeing. |  |  |  |  |  |  |  |  |
| 18) I would like to introduce him or her to my friends. |  |  |  |  |  |  |  |  |

The other five questions in the comparison

**Table 3. The Categorization of Each Actor’s Role in Qualitative Studies**

|  |  |  |  |
| --- | --- | --- | --- |
| **Qualitative Study Results** | **Classification in This Study** | | **Name** |
| supervisor | supervisor | | ZL |
| core member | core member | | XJY |
| core member | core member | | YYL |
| core member | core member | | HJ |
| peripheral member | peripheral member | | MFY |
| peripheral member | peripheral member | | WWD |
| marginal member | Outsider | | XDC |
| marginal member | Outsider | | HLC |
| peripheral member | peripheral member | | YLL |
| marginal member | Outsider | | ZMH |
| peripheral member | peripheral member | | FLF |
| peripheral member | peripheral member | | LJI |
| peripheral member | peripheral member | | LWF |
| marginal member with dense networking | peripheral member | | LJ |
| marginal member | Outsider | | LYS |
| marginal member with dense networking | peripheral member | | ZB |
| peripheral member | peripheral member | | CB |
| marginal member | Outsider | | HZL |
| marginal member | Outsider | | WWS |
| marginal member | Outsider | | THC |
| marginal member | Outsider | | XHP |
| marginal member with dense networking | peripheral member | | ZHM |
| Outsider | Outsider | | YJP |
| marginal member | Outsider | | HL |
| marginal member with dense networking | peripheral member | | JHJ |
| Outsider | Outsider | | YS |
| peripheral member | peripheral member | | ZZB |
| marginal member | Outsider | | HT |
| marginal member | Outsider | | ZH |
| marginal member | Outsider | | LYR |
| Outsider | Outsider | | YXX |
| Outsider | Outsider | | PYP |
| Outsider | Outsider | | LY |
| Outsider | Outsider | | LYL |
| peripheral member | peripheral member | | HHQ |
| Outsider | Outsider | | JJ |
| marginal member | Outsider | | XHR |
| Informal leaders’ core or bridge | peripheral member | | LHZ |
| Outsider | Outsider | | WHY |
| Outsider | Outsider | | LYE |
| Informal leaders’ core or bridge | peripheral member | | YL |
| Outsider | Outsider | | LJJ |
| Outsider | Outsider | | XJJ |
| Outsider | Outsider | | LLJ |
| Informal leaders’ core | Outsider | | WNZ |
| Outsider | Outsider | | WQ |
| Informal leaders’ core | Outsider | | XYQ |
| Informal leaders’ core or bridge | peripheral member | | YTA |
| Informal leaders’ core or bridge | peripheral member | | LL |
| Outsider | Outsider | | WQJ |
| marginal member | Outsider | | DBQ |
| peripheral member | peripheral member | | WXY |
| Outsider | Outsider | | ZXH |
| Outsider | Outsider | | ZBW |
| Informal leaders’ core | Outsider | | LQP |
| Outsider | Outsider | | PFL |
| Outsider | Outsider | | LAH |
| Outsider | Outsider | | ZSJ |
| Outsider | Outsider | | YHY |
| Outsider | Outsider | | PLH |
|  | |  |  |

**Note: In this study, marginal members and Informal leaders’ core will be taken as outsiders. Those dense networking members and bridges will be taken as peripheral members.**

**Table 4. The Comparison among Three Computing Methods**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name** |  | **Divided by 9** | **Divided by network size** | **Normalized** | **Divided by 9** | **Divided by network size** | **Normalized** |
| ZL | supervisor | supervisor | supervisor | supervisor |  |  |  |
| XJY | core member | core | core | core | 6.47 | 3.54 | 5.75 |
| YYL | core member | core | core | core | 5.84 | 3.44 | 5.34 |
| HJ | core member | core | core | core | 5.84 | 3.44 | 5.31 |
| MFY | peripheral member | circle | circle | circle | 4.73 | 1.92 | 3.88 |
| WWD | peripheral member | Type I | Type I | Type I | 1.49 | 0.23 | 1.28 |
| XDC | Outsider |  |  |  | 1.58 | 0.41 | 1.17 |
| HLC | Outsider |  |  |  | 0.91 | 0.14 | 0.66 |
| YLL | peripheral member | circle | circle | circle | 3.67 | 1.08 | 2.82 |
| ZMH | Outsider |  |  |  | 1.11 | 0.17 | 0.76 |
| FLF | peripheral member | circle | circle | circle | 2.80 | 1.11 | 2.26 |
| LJI | Peripheral member | Type I | Type I | Type I | 2.09 | 0.66 | 1.63 |
| LWF | peripheral member | circle | circle | circle | 3.47 | 1.72 | 3.13 |
| LJ | peripheral member | circle | circle | circle | 2.56 | 1.07 | 2.14 |
| LYS | Outsider |  |  |  | 0.80 | 0.12 | 0.56 |
| ZB | peripheral member | circle | circle | circle | 3.69 | 1.08 | 2.82 |
| CB | peripheral member | circle | circle | circle | 3.51 | 1.05 | 2.84 |
| HZL | Outsider |  |  |  | 1.13 | 0.18 | 0.89 |
| WWS | Outsider |  |  |  | 0.98 | 0.15 | 0.69 |
| THC | Outsider | Type II |  |  | 2.42 | 0.71 | 1.82 |
| XHP | Outsider |  |  |  | 1.31 | 0.20 | 0.96 |
| ZHM | peripheral member | circle | circle | circle | 2.80 | 1.11 | 2.26 |
| YJP | Outsider |  |  |  | 0.84 | 0.13 | 0.60 |
| HL | Outsider |  |  |  | 1.22 | 0.19 | 0.89 |
| JHJ | peripheral member | circle | circle | circle | 3.73 | 1.26 | 2.84 |
| YS | Outsider |  |  |  | 1.20 | 0.19 | 0.84 |
| ZZB | peripheral member | circle | Type I | circle | 2.91 | 0.96 | 2.40 |
| HT | Outsider |  |  |  | 1.22 | 0.19 | 0.92 |
| ZH | Outsider |  |  |  | 1.82 | 0.45 | 1.38 |
| LYR | Outsider |  |  |  | 1.29 | 0.20 | 0.97 |
| YXX | Outsider |  |  |  | 0.82 | 0.13 | 0.56 |
| PYP | Outsider |  |  |  | 1.18 | 0.18 | 0.90 |
| LY | Outsider |  |  |  | 0.91 | 0.14 | 0.65 |
| LYL | Outsider |  |  |  | 0.89 | 0.14 | 0.65 |
| HHQ | peripheral member | circle | circle | circle | 3.42 | 1.38 | 2.94 |
| JJ | Outsider |  |  |  | 1.42 | 0.22 | 1.09 |
| XHR | Outsider |  |  |  | 1.38 | 0.21 | 1.02 |
| LHZ | peripheral member | circle | circle | circle | 3.09 | 1.16 | 2.73 |
| WHY | Outsider |  |  |  | 0.87 | 0.13 | 0.61 |
| LYE | Outsider |  |  |  | 0.89 | 0.14 | 0.61 |
| YL | peripheral member | circle | circle | circle | 3.67 | 1.41 | 3.02 |
| LJJ | Outsider |  |  |  | 1.09 | 0.17 | 0.78 |
| XJJ | Outsider |  |  |  | 0.91 | 0.14 | 0.67 |
| LLJ | Outsider |  |  |  | 0.89 | 0.14 | 0.62 |
| WNZ | Outsider |  |  |  | 1.04 | 0.16 | 0.73 |
| WQ | Outsider |  |  |  | 1.02 | 0.16 | 0.74 |
| XYQ | Outsider |  |  |  | 1.02 | 0.16 | 0.72 |
| YTA | peripheral member | circle | circle | circle | 3.62 | 1.24 | 3.09 |
| LL | peripheral member | circle | circle | circle | 4.02 | 1.47 | 3.19 |
| WQJ | Outsider |  |  |  | 0.91 | 0.14 | 0.65 |
| DBQ | Outsider |  |  |  | 1.18 | 0.18 | 0.83 |
| WXY | peripheral member | circle | circle | circle | 4.58 | 1.56 | 3.81 |
| ZXH | Outsider |  |  |  | 0.87 | 0.13 | 0.60 |
| ZBW | Outsider |  |  |  | 1.62 | 0.42 | 1.26 |
| LQP | Outsider | Type II | Type II | Type II | 3.24 | 1.01 | 2.34 |
| PFL | Outsider |  |  |  | 1.09 | 0.17 | 0.77 |
| LAH | Outsider |  |  |  | 0.87 | 0.13 | 0.59 |
| ZSJ | Outsider |  |  |  | 0.89 | 0.14 | 0.61 |
| YHY | Outsider |  |  |  | 0.89 | 0.14 | 0.60 |
| PLH | Outsider |  |  |  | 0.82 | 0.13 | 0.56 |
|  |  | 2.2.19/23 | 3.1.18/23 | 2.1.19/22 |  |  |  |
|  |  | 0.826 | 0.826 | 0.863 |  |  |  |

**Table 5. The Comparison among Ten Networks**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name** | |  | **Question 1** | **Question 3** | **Question 4** | **Question 5** | **Question 9** | **Question 14** | **Question 15** | **Question 16** | **Question 17** | **Question 18** |
| ZL | supervisor | | supervisor | supervisor | supervisor | supervisor | supervisor | supervisor | supervisor | supervisor | supervisor | supervisor |
| XJY | core member | | core | core | core | core | core | core | core | core | core | core |
| YYL | core member | | core | core | core | core | core | core | core | core | core | core |
| HJ | core member | | core | core | Type II | core | core | core | core | core | core | core |
| MFY | peripheral member | | circle | circle | circle | Type I | circle | Type I | circle | circle | Type I | Type I |
| WWD | peripheral member | | Type I | Type I | Type I | Type I | circle | Type I | Type I | Type I | Type I | Type I |
| XDC | Outsider | |  |  |  |  | Type II |  |  |  | Type II |  |
| HLC | Outsider | |  |  |  |  |  |  |  |  |  |  |
| YLL | peripheral member | | circle | Type I | circle | Type I | circle | circle | Type I | circle | circle | Type I |
| ZMH | Outsider | |  |  |  |  |  |  |  |  |  |  |
| FLF | peripheral member | | Type I | circle | circle | Type I | circle | Type I | circle | circle | circle | Type I |
| LJI | Peripheral member | | Type I | circle | circle | circle | Type I | Type I | Type I | circle | circle | Type I |
| LWF | peripheral member | | Type I | circle | circle | circle | circle | circle | circle | circle | circle | circle |
| LJ | peripheral member | | circle | circle | Type I | Type I | Type I | circle | circle | circle | circle | Type I |
| LYS | Outsider | |  |  |  |  |  |  |  |  |  |  |
| ZB | peripheral member | | circle | circle | Type I | circle | circle | circle | Type I | circle | circle | Type I |
| CB | peripheral member | | circle | Type I | circle | Type I | circle | circle | circle | circle | Type I | Type I |
| HZL | Outsider | | Type II | Type II |  |  |  |  |  |  |  |  |
| WWS | Outsider | |  |  |  |  |  |  |  |  |  |  |
| THC | Outsider | |  |  |  |  |  |  | Type II |  | Type II |  |
| XHP | Outsider | |  |  |  |  |  |  |  |  |  |  |
| ZHM | peripheral member | | circle | circle | circle | Type I | circle | circle | circle | circle | circle | Type I |
| YJP | Outsider | |  |  |  |  |  |  |  |  |  |  |
| HL | Outsider | |  |  |  |  | Type II |  |  |  |  |  |
| JHJ | peripheral member | | Type I | Type I | Type I | circle | circle | circle | circle | circle | circle | Type I |
| YS | Outsider | |  |  |  |  |  |  |  |  |  |  |
| ZZB | peripheral member | | circle | circle | circle | circle | circle | Type I | circle | circle | circle | Type I |
| HT | Outsider | |  |  |  |  |  |  |  |  |  |  |
| ZH | Outsider | | Type II | Type II |  | Type II | Type II | Type II |  |  |  |  |
| LYR | Outsider | |  |  |  |  |  |  |  |  |  |  |
| YXX | Outsider | |  |  |  |  |  |  |  |  |  |  |
| PYP | Outsider | |  |  |  |  |  |  |  |  |  |  |
| LY | Outsider | |  |  |  |  | Type II |  |  |  |  |  |
| LYL | Outsider | |  |  |  |  |  |  |  |  |  |  |
| HHQ | peripheral member | | circle | circle | circle | circle | circle | circle | circle | circle | circle | circle |
| JJ | Outsider | |  |  |  |  |  |  |  |  |  |  |
| XHR | Outsider | |  |  |  |  | Type II |  |  |  |  |  |
| LHZ | peripheral member | | circle | Type I | Type I | Type I | Type I | Type I | circle | circle | circle | circle |
| WHY | Outsider | |  |  |  |  |  |  |  |  |  |  |
| LYE | Outsider | |  |  |  |  |  |  |  |  |  |  |
| YL | peripheral member | | circle | circle | Type I | circle | circle | circle | circle | circle | circle | circle |
| LJJ | Outsider | |  |  |  |  |  |  |  |  |  |  |
| XJJ | Outsider | |  |  |  |  |  |  |  |  |  |  |
| LLJ | Outsider | |  |  |  |  |  |  |  |  |  |  |
| WNZ | Outsider | |  | Type II |  |  |  |  |  |  |  |  |
| WQ | Outsider | |  |  |  |  |  |  |  |  |  |  |
| XYQ | Outsider | |  |  |  |  | Type II |  |  |  |  |  |
| YTA | peripheral member | | Type I | Type I | Type I | Type I | circle | circle | circle | Type I | circle | circle |
| LL | peripheral member | | circle | Type I | Type I | circle | circle | circle | circle | circle | circle | circle |
| WQJ | Outsider | |  |  |  |  | Type II |  |  |  |  |  |
| DBQ | Outsider | |  |  | Type II |  |  |  |  |  |  |  |
| WXY | peripheral member | | circle | circle | Type I | circle | circle | circle | circle | circle | circle | circle |
| ZXH | Outsider | |  |  |  |  |  |  |  |  |  |  |
| ZBW | Outsider | |  | Type II | Type II |  |  |  |  |  |  |  |
| LQP | Outsider | |  |  |  |  | Type II | Type II |  | Type II | Type II |  |
| PFL | Outsider | |  |  |  |  |  |  |  |  |  |  |
| LAH | Outsider | |  |  |  |  |  |  |  |  |  |  |
| ZSJ | Outsider | |  |  |  |  |  |  |  |  |  |  |
| YHY | Outsider | |  |  |  |  |  |  |  |  |  |  |
| PLH | Outsider | |  |  |  |  |  |  |  |  |  |  |
|  | |  | 5.3.15/23 | 7.4.14/25 | 10.2.11/23 | 9.1.12/22 | 3.8.18/29 | 6.2.15/23 | 4.1.17/22 | 2.1.19/22 | 3.3.18/24 | 11.0.10/21 |
|  | |  | 0.652 | 0.56 | 0.478 | 0.55 | 0.620 | 0.652 | 0.772 | 0.863 | 0.75 | 0.476 |

**Table 6. The Comparison between the Combinations of Three- and Five-Questions**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | |  | **3 questions combination** | **5 questions combination** |
| ZL | supervisor | | supervisor | supervisor |
| XJY | core member | | core | core |
| YYL | core member | | core | core |
| HJ | core member | | core | core |
| MFY | peripheral member | | circle | circle |
| WWD | peripheral member | | Type I | Type I |
| XDC | Outsider | |  |  |
| HLC | Outsider | |  |  |
| YLL | peripheral member | | circle | circle |
| ZMH | Outsider | |  |  |
| FLF | peripheral member | | circle | circle |
| LJI | Peripheral member | | circle | Type I |
| LWF | peripheral member | | circle | circle |
| LJ | peripheral member | | circle | circle |
| LYS | Outsider | |  |  |
| ZB | peripheral member | | circle | circle |
| CB | peripheral member | | circle | circle |
| HZL | Outsider | |  |  |
| WWS | Outsider | |  |  |
| THC | Outsider | | Type II |  |
| XHP | Outsider | |  |  |
| ZHM | peripheral member | | circle | circle |
| YJP | Outsider | |  |  |
| HL | Outsider | |  |  |
| JHJ | peripheral member | | circle | circle |
| YS | Outsider | |  |  |
| ZZB | peripheral member | | circle | circle |
| HT | Outsider | |  |  |
| ZH | Outsider | |  |  |
| LYR | Outsider | |  |  |
| YXX | Outsider | |  |  |
| PYP | Outsider | |  |  |
| LY | Outsider | |  |  |
| LYL | Outsider | |  |  |
| HHQ | peripheral member | | circle | circle |
| JJ | Outsider | |  |  |
| XHR | Outsider | |  |  |
| LHZ | peripheral member | | circle | circle |
| WHY | Outsider | |  |  |
| LYE | Outsider | |  |  |
| YL | peripheral member | | circle | circle |
| LJJ | Outsider | |  |  |
| XJJ | Outsider | |  |  |
| LLJ | Outsider | |  |  |
| WNZ | Outsider | |  |  |
| WQ | Outsider | |  |  |
| XYQ | Outsider | |  |  |
| YTA | peripheral member | | circle | circle |
| LL | peripheral member | | circle | circle |
| WQJ | Outsider | |  |  |
| DBQ | Outsider | |  |  |
| WXY | peripheral member | | circle | circle |
| ZXH | Outsider | |  |  |
| ZBW | Outsider | |  |  |
| LQP | Outsider | | Type II | Type II |
| PFL | Outsider | |  |  |
| LAH | Outsider | |  |  |
| ZSJ | Outsider | |  |  |
| YHY | Outsider | |  |  |
| PLH | Outsider | |  |  |
|  | |  | 1.2.20/23 | 2.1.19/22 |
|  | |  | 0.869 | 0.863 |

**Figure 1: Guanxi Circles and Fragmented Network Structure in Chinese Workplaces**

Outsiders

An Informal leader’s Peripheral members

The supervisor’s Peripheral members

A Sub-circle of the supervisor’s circle

Bridges

The supervisor’s Core members

An Informal leader’s Core Members

Another Guanxi Circle

**Figure 2: The Two “Cliffs” in the Rank of Guanxi Circle Effects (Taking Question 17 as an Example)**



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2. Part of this book chapter is adopted from the following two papers: a. Luo, Jar-Der and Cheng, Meng-Yu, 2015, “Guanxi Circles’ Effect on Organizational Trust--Bringing Power and Vertical Social Exchanges into Intra-organizational Network Analysis.” American Behavioral Scientist 59(8): 1024-37. b. Luo, Jar-Der and Yeh, Kevin, 2012, “Neither Collectivism Nor Individualism--Trust in Chinese Guanxi Circles.” Journal of Trust Research, 2(1):53-70. [↑](#footnote-ref-2)
3. Luo, Jar-Der is a professor of Sociology Dept. , Tsinghua University, China, and Director of Tsinghua Center of Social Network Research. The corresponding author is Luo, Jar-Der, and his e-mail is [jdluo@mail.tsinghua.edu.cn](mailto:jdluo@mail.tsinghua.edu.cn) ; Tel: 86-62771827 ext 309. Luo, Jar-Der takes all responsibility for this paper. Ronald Burt provides this article with the computation methods of guanxi circle. [↑](#footnote-ref-3)
4. Xiao, Han is an assistant professor of Business School, Shanghai Finance and Economics University, China. Burt, Ronald is a professor of Sociology Dept., Chicago University, U.S.. Chou, Cao-Wen is a master of Sociology Dept., Tsinghua. U., China. Cheng, Meng-Yu is an associate professor, Feng-Chia University Department of Business Administration, Taiwan. Fu, Xiao-Ming is a professor of computer science dept., University of Göttingen, Germany. [↑](#footnote-ref-4)