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Teamwork in Chinese Organizations: A New Concept and Framework

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TEAMWORK IN CHINESE ORGANIZATIONS:

A NEW CONCEPT AND FRAMEWORK

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ABSTRACT

TEAMWORK IN CHINESE ORGANIZATIONS:
A NEW CONCEPT AND FRAMEWORK

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Teamwork has always been a challenge in China, and the importance of teamwork has not been well recognized. This study was designed to explore the underlying definition of teamwork that Chinese people use to describe their teams, to identify variables related to teamwork, to develop a new framework and measure of teamwork in Chinese organizations, and to test the psychometric properties of the measure as well as the structural relationships of the new framework of teamwork in Chinese teams. This study also examines the influence of guanxi - an important Chinese cultural value that emphasizes exchange and reciprocity in relationships - on teamwork in Chinese organizations.

A model of teamwork was created and tested in China. This model of teamwork includes the following variables: task interdependence, guanxi, team orientation, team leadership, communication, monitoring, feedback, backup, coordination, and team performance. A questionnaire was administrated to 1657 individuals representing 323 teams from a variety of functions in five Chinese organizations. Structural equation modeling was used to test the measurement model and the structural model at the team level of analysis.

Empirical support was found for most of the hypothesized relationships. A revised model was tested and the fit was improved substantially. One of the most important results of this study was discovery of positive effects for guanxi, communication, and team leadership on other team components and team performance. The current study provides a foundation for exploring teamwork process and appropriate measures for Chinese teams. The results derived from this research can be used to guide additional research that improves our understanding of the complex teamwork process in Chinese organizations.

This dissertation is dedicated to Zhongsheng Wang.

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INTRODUCTION

The ability of individuals to work together as a team is critical to the success of many organizations and work groups. It has been widely recognized that much of the work accomplished in business and industry is the result of teamwork (Sundstrom, De Meuse, & Futrell, 1990). Recent technological developments, global competition, and world events have made teamwork increasingly important. Effective teamwork provides the framework for organizations to achieve performance goals and to gain greater fluidity and flexibility in responding rapidly to market challenges and opportunities. Researchers have also argued that effective teamwork is a foundation for successful organizations that serve customers and develop employee commitment (Cohen & Ledford, 1994; Hackman, 1990; Stewart & Barrick, 2000).

The changes of the Chinese economy from heavy state intervention to market orientation as well as membership in the World Trade Organization (WTO) have forced China to become integrated into the global economy. China's continued rapid economic development has also helped China establish dominant economic power in East Asia (Chen & Barshes, 2000). Due to changes in organizational structure and increased complexity of tasks, it is highly likely that more and more decentralized operations involving teams will be adopted in China. Teams are the basic building blocks for any kind of organizational structure, and teamwork is especially important in flat organizational structures (Higgs, 1996). In situations requiring a combination of multiple skills, experiences, and judgments to achieve complicated tasks, teams inevitably get better results than a simple collection of individuals operating within fixed job roles and

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responsibilities (Katzenbach & Smith, 1999). Chinese organizations will need to practice teamwork widely to pursue better productivity, higher quality output, less absenteeism, less employee turnover, and substantial improvement in production-cycle time (Chen & Barshes, 2000).

There is a Chinese saying: "One Chinese person is as strong as a dragon, while a group of Chinese people is as weak as insects." This saying suggests that teamwork has always been a big problem for Chinese people. On one hand, Chinese people would sacrifice their own interests for their teams due to the influence of collectivism as well as "keeping harmony" values. On the other hand, other Chinese cultural values, such as guanxi (a kind of special exchange relationship) among team members, make teamwork very complicated. Maintaining hierarchy and keeping harmony can be important to team cohesion, but it can also get in the way of efficiently achieving team goals. The importance of teamwork in China has not been well recognized or frequently studied.

Lack of research on Chinese teams makes teamwork in Chinese organizations more challenging. An effective way to train Chinese people to be effective "team players" is not only something new, but also something of potentially great benefit to modern organizations. Thus, the objectives of the current study were to:

(1) Explore the underlying definition of teamwork that people hold to describe their teams in Chinese organizations;

(2) Identify variables that contribute to teamwork in Chinese organizations;

(3) Develop a comprehensive framework and measure of teamwork for Chinese teams;

(4) Test the reliability and validity of the teamwork measure;

(5) Test the structural relationships of the new framework of teamwork in Chinese teams.

Basic Definitions

Before introducing the conceptualization of teamwork relevant to Chinese culture, a comprehensive and commonly accepted definition for a team is needed as a starting point. For the purposes of this study, the following conceptualization is adopted:

> [A] team is defined as a distinguishable set of two or more people who interact, dynamically, interdependently, and adaptively toward a common and valued goal/objective/mission, who have each been assigned specific roles or functions to perform, and who have a limited life-span of membership (Salas, Dickinson, Converse, & Tannenbaum, 1992, p. 4).

In addition, teams are characterized as having specialized knowledge and skills, making decisions, and working under high workload conditions (Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995; Orasanu & Salas, 1993).

Teamwork refers to the processes of interdependent activities that are used to achieve team tasks (i.e., task work) in the pursuit of team goals. Teamwork consists of behaviors such as coordination, mutual adjustment, compensatory behavior, communication, flexibility/adaptability, and cohesion (McIntyre, Morgan, Salas, & Glickman, 1988). Teamwork involves team members adjusting to each other to achieve

team goals (Dickinson & MyIntyre, 1997). Previous cross-cultural psychology research has concluded that the specific content of teamwork conceptualizations varies across cultures (Cohen & Bailey, 1997; Gibson & Zellmer-Bruhn, 2001). These studies suggest that most teamwork definitions are likely to include the scope of team activity, roles and nature of team members, and objectives of teamwork (Gibson & Zellmer-Bruhn, 2001).

Measurement of Teamwork

Team performance generally refers to an evaluation of the results of performance with no consideration of the costs of achieving the results (Ingram, 1996). Performance outcomes represent the consequences or results of performance behaviors. Assessing performance as outcome (e.g., productivity) is fairly common in many areas of applied psychology. However, as Campbell, McCloy, Oppler and Sager (1993) have pointed out, this point of view does not take into consideration the many potential impediments to team performance that are outside the control of individuals.

In fact, a dictionary definition of team performance includes two parts: the process of performing and notable achievement (Oxford English Dictionary, 1971). Without a doubt, performance, as represented by "productivity," is extremely important. However, performance is in the doing, not in the result of what has been done. Campbell et al. (1993) argued that appropriate consideration should be given beyond tacit acknowledgment as the outcome variable. That is, the theory underlying performance rather than performance itself is central. Although teams are valued for their outcomes, team process measures may provide truer evidence of team functioning than do outcome variables (Brannick & Prince, 1997). Team process measures concentrate on problems encountered by teams, whereas outcome measures may contain other factors that are not

attributable to teamwork. Therefore, team performance should refer to an evaluation of actions or behaviors relevant to the goals of the team or of the organization. At the same time, team performance as outcomes is still a key factor in assessing team process. Brannick and Prince (1997) conclude that a comprehensive measure of teamwork should contain both process and outcome measures.

It has been widely recognized that measurement of performance is important. However, the best method for assessing team performance remains open to debate (Dyer, 1984). Nevertheless, the impact of team behaviors on performance has been well researched (Alexander & Cooperband, 1965; Lanzetta & Roby, 1960; Morgan, Glickman, Woodard, Blaiwes, & Salas, 1986). Knowledge, attitudes, and cognitive skills all contribute to team performance. There have been many studies conducted to develop team process measures. No agreement has been made upon a set of factors, skills, or activities that can fully explain team functioning. Developing measures of performance criteria that are valid and reliable is often the starting point of research in work settings.

Teamwork Models

Over the past several decades, several models of assessing teamwork performance have been developed. The key models are reviewed in the following section. Table 1 provides a summary of these teamwork models.

Fleishman. The model developed by Fleishman and his colleagues (e.g. Cooper, Shiflett, Korotkin, & Fleishman, 1984; Nieva, Fleishman, & Rieck, 1978; Fleishman & Quaintance, 1984) is important because it simultaneously addresses contextual demands, task characteristics, and human abilities. It does this in a manner that allows for the psychometrically sound measurement of team-performance dimensions.

Table 1

Summary of Teamwork Models

Model of teamwork	Variables affecting team performance								
	Organization contexts considered	Human ability	Members' perception	Task characteristics	Task behaviors	Subtasks accomplishments	Rewards system	Goal-setting	Team behaviors
Fleishman & colleagues	X	X		X					
Task-oriented model				X		X			X
Normative model	X	X	X						
ProMES							X	X	X
Team behavior models					X				X
Team component model									X

Note. X indicates that models of teamwork include variables listed in the matrix.

In Fleishman's model, dimensions of team performance are identified and refined, and rating scales with behavioral anchors are used to rate each dimension.

Task-oriented model. Some researchers emphasize task-oriented analysis of team performance (Dickinson, 1969; Dieterly, 1988; Naylor & Dickinson, 1969; Shiflett, Eisner, Price, & Schemmer, 1982). In order to achieve team goals, team members must perform subtasks effectively. Dickinson (1969) emphasizes task structure, work structure, and communication structure. According to the task-oriented model, task complexity and task organization can determine communication structure and enhance team performance. The task-oriented model identified the effects of communication on team effectiveness and has been supported by research (e.g., Bass & Barrett, 1981; Briggs & Johnston, 1967; Naylor & Dickinson, 1969).

Normative model. Hackman (1983) presents a normative model based on the assumption that organizational context and group design affect team process. According to Hackman (1983, 1990), three dimensions of performance are critical. The first dimension is productive output, a typical task-work dimension. The other two dimensions concern the organizational context or environment surrounding a team. Hackman (1983) argues that team effectiveness is facilitated by team members' ability to work together and foster the growth and well-being of team members. Specifically, teams in organizations exist over relatively long periods of time. Therefore, the second dimension is the critical behaviors of team effectiveness that facilitate the team's ability to work well together in the future. Hackman (1983, 1990) recognizes that the third important dimension of a team's performance is maintaining perceptions of a reasonable exchange in the eyes of its members. Team members must feel that they are gaining something

personally from working in the team. Hackman's model offers several important conceptual elements for understanding team performance.

ProMES. Pritchard and his colleagues (Pritchard, 1995; Pritchard, Jones, Roth, Stuebing, & Ekeberg, 1988) developed a system known as ProMES, for "productivity measurement," which provides an interesting contrast in approaches to work team performance, effectiveness, or productivity. Key to the ProMES system is giving feedback, applying goal-setting principles, and establishing reward systems for the team. ProMES creates a measure that is anchored idiosyncratically in each team, but then the idiosyncratic dimensions are transformed into a common effectiveness metric. Using this metric, the ProMES system can be extended to aggregate team performance up the organizational hierarchy so that an estimate of total productivity can be obtained at each level by combining all lower levels. Teams identify the outcomes they produce and estimate how each outcome contributes to the unit's effectiveness. Feeding back performance data helps teams to understand what they produce and how it relates to effectiveness. Team members will pay attention to one kind of output if effectiveness increases sharply as more units of that kind of output are produced.

Team behavior models. Morgan and his colleagues (1986) used critical incidents representing effective and ineffective team behaviors to construct their team evolution and maturation (TEAM) measure of team performance. Morgan et al. (1986) state that teams have two parallel performance tracks that develop over time. The taskwork track focuses on operations-related behaviors relatively idiosyncratic to the tasks to which teams were assigned. The teamwork track reflects activities that strengthen relationships, communication, and coordination within teams. Morgan et al's (1986) teamwork model

identifies coordination, adaptation to varying situational demands, compensatory behavior, performance monitoring, feedback, closed-loop communications, and backing-up behaviors as sub-dimensions of teamwork.

Building on the model of Morgan et al. (1986), some researchers refined the measures of team performance by deriving team performance dimensions from clustering descriptions of team behaviors scaled in terms of effectiveness (Baker & Salas, 1992, 1997; Cannon-Bowers, Salas, & Converse, 1993; Dickinson & MyIntyre, 1997; Dickinson, McIntyre, Ruggeberg, Yanushefski, Hamill, & Vick, 1992). Critical team behaviors are identified that focus on team effectiveness other than just team process. For example, Prince and Salas (1989) argued that critical team behaviors include communication, leadership, decision making, adaptability, assertiveness, situation awareness, and mission analysis. According to Stevens and Campion (1994), conflict resolution, communication, monitoring, and feedback are essential to effective teamwork. Helmreich and Foushee (1993) identified several major teamwork process behaviors including communication, decision behavior, team building, workload management, situation awareness, and operational integrity. Cannon-Bower et al. (1995) argued that adaptability, shared situational awareness, and performance monitoring and feedback are critical to team performance.

More recently, Kraiger and Wenzel (1997) suggest that team performance is related to the degree that team members have a shared mental model. The shared mental model is in a network, which includes inputs such as environmental, organizational, team, and individual variables, and outputs inducing team performance and effectiveness.

The behaviors emphasized in the teamwork models described above are depicted in Table 2.

The Teamwork Component Model

Dickinson and McIntyre (1997) developed a framework of team process behaviors that emphasizes the sharing of information and coordination of activities among team members in order to achieve team goals (i.e., teamwork). This teamwork model is based on research in team training by McIntyre and Salas (1995) that describes components of teamwork necessary for successful performance. This model of teamwork components was used to guide this research.

Dickinson and McIntyre (1997) state that teamwork requires members to have positive attitudes toward the team, rewards must be based on team goals, and team members must know their own task as well as the tasks of other team members who interact with them. Thus, team members are able to coordinate their activities by monitoring their own performance and the performance of other team members and by providing feedback and backup behaviors. Components of this team process model include communication, team orientation, team leadership, monitoring, feedback, backup behavior, and coordination (Dickinson et al., 1992; Dickinson & McIntyre, 1997).

Communication is the "active exchange of information between two or more members of the team, as well as individual team members providing information to others in the appropriate manner" (p. 21).

Table 2

Summary of Team Behaviors

Team behaviors Affecting Performance	Teamwork Models							
	ProMES	Morgan et al.	Prince & Salas	Stevens & Campion	Helmreich & Foushee	Cannon-Bower et al.	Dickinson & McIntyre	Kraiger & Wenzel
Giving/seeking feedback	X	X		X		X	X	
Monitoring		X		X		X	X	
backup behaviors		X					X	
Communication		X	X	X	X		X	
Leadership			X				X	
Decision-making			X		X			
Adaptability		X	X			X		
Assertiveness			X					
Situational awareness			X		X	X		
Mission analysis			X					
Conflict resolution				X				
Team building					X			
Workload management					X			
Operational integrity					X			
Shared mental model								X
Coordination		X					X	
Team orientation							X	

Note. X indicates that teamwork research includes variables listed in the matrix.

Team orientation is the attitude that team members have concerning one another and the team task. It reflects acceptance of team norms, cohesiveness of the group, and self-awareness as a team member. Team members who have a high level of team orientation will assign high priority to team goals and willingly participate in the team's activities.

Team leadership is a process of providing direction, structure, and support for team members. Team leadership need not necessarily reside within a single appointed individual with formal authority; it may emerge within any team member as the situation warrants (Dickinson & McIntyre, 1997; Larson & LaFasto, 1989).

Monitoring is defined as observing the activities performance of their teammates (Dickinson et. al., 1992). This implies that team members can provide constructive feedback regarding errors and offer advice for improving performance to each other (Cannon-Bowers et al., 1995). Team members must be individually competent. Clarity of communication, high levels of honesty and trust, and good team orientation can all facilitate monitoring behaviors. The individual must trust that other members will not view him or her as inferior for requesting assistance and that other members will reply honestly.

Feedback involves the giving, seeking, and receiving of information among team members. Giving feedback refers to providing information regarding another member's performance. In addition to giving feedback, effective team members sometimes ask for feedback. Seeking feedback refers to requesting input or guidance regarding one's own performance. When a team member faces a challenge or difficulty, he or she may ask for clarification or an idea to resolve the difficulty. Receiving feedback refers to accepting

positive and negative information regarding performance. Feedback is related to effective team performance. Morgan et al. (1986) found that members of successful teams praise the accomplishments of other team members and are supportive when a team member makes a mistake. Morgan et al. (1986) further suggest that team members be adept at giving feedback in a non-threatening way and be prepared to accept constructive feedback.

Backup behavior involves assisting the performance of other team members. Team members must have an understanding of other members' tasks and be willing and able to provide and seek assistance when needed. Oser, McCallum, Morgan, and Salas (1989) found members' willingness to ask for help when in need of assistance was positively related to team performance. Peron (1993) found workers trained in performing backup behaviors subsequently improved their team performance.

Coordination of team members reflects the execution of team activities such that members respond as a function of the behavior of others. Simply, successful coordination implies that the team members execute their activities in a timely and integrated manner to produce synchronized performance (Dickinson & McIntyre, 1997). Numerous research studies suggest that coordinated behaviors on the part of a team lead to successful performance (Kleinman & Serfaty, 1989; Nieva, Fleishman, & Reick, 1978; Orasanu, 1990). Coordination varying in explicitness pertains to the degree to which team members must articulate their behaviors or interact in the absence of verbal communication. Explicit team coordination describes interaction involving overt team communication. Implicit team coordination describes team interaction behavior that is coordinated in the absence of open communication (Entin & Serfaty, 1999).

Measures of the seven components of teamwork have been developed (Dickinson et al., 1992; Dickinson & McIntyre, 1997). Strong content validity was reported by Dickinson et al. (1992). Rosenstein (1994) demonstrated strong construct validity by using data collected from over 100 teams.

Although research in the United States has confirmed the factors representing teamwork described in this model, it is uncertain whether these relationships will hold for Chinese teams. Testing the generalization of this model of teamwork in China is the purpose of the research.

Teamwork in China

As mentioned earlier, China presents a complex context for the study of teamwork. First, Chinese culture suppresses individual interests so as to serve the interests of the group. The central aspects of teamwork including common goal, task interdependence, and team orientation could be easily promoted by the collectivist orientation of Chinese culture (Chen, Bishop, & Dow Scott, 2000). However, the rigid social hierarchies that exist in Chinese organizations and society create barriers to autonomous and flexible teamwork.

It remains unclear whether the concept and practice of teamwork can be transferred to China. There is little evidence of how teamwork is generally perceived and received in China's distinct national and business cultures (Chen & Barshes, 2000; Chen et al., 2000). A study of four US-invested enterprises in China revealed that Chinese employees are generally ready for teamwork (Chen & Barshes, 2000). However, Chinese employees tended to view teamwork more as a general principle or spirit than as an effective management practice. In fact, Chinese work teams do not function in the same

manner as American teams. Most Chinese employees generally identify teams as their functional departments or the work sections in their organization rather than as a small group of individuals that should work together.

Researchers have increasingly argued that interpersonal relationships among team members and resource interdependence affect team effectiveness as measured by the extent that team members complete their tasks effectively (Tjosvold, Hui, Ding, & Hu, 2003). Meta-analyses have shown that competitive interaction disrupts work on joint tasks (Johnson & Johnson, 1989; Johnson, Maruyama, Johnson, Nelson, & Skon, 1981). Chen and Barshes (2000) suggest that collectivism, perception of task interdependence, effective communication, guanxi among team members, and willingness to cooperate would foster teamwork in Chinese teams, but they do not provide any empirical support for their beliefs. This research tests the importance of task interdependence and guanxi.

Task interdependence. Task interdependence has been defined as the relationship among group members' task or the extent to which members of groups rely on one another to perform their tasks (Saavedra, Earley, & Van Dyne, 1993). This definition is based upon several earlier sources (e.g. Kiggundu, 1981; 1983; Thompson, 1967; Van de Ven & Ferry, 1980).

Task interdependence is an important feature of teamwork. According to Shea and Guzzo (1987), task interdependence refers to the degree of task-driven interaction among team members. Guzzo (1986) considers task interdependence to be an essential variable for team effectiveness. Campion, Medsker, and Higgs (1993) argued that interdependent tasks are defining characteristics of self-directed work teams and sometimes are the reason that teams are formed.

In work teams, task interdependence means the amount of task-required cooperation; it exists when team members must share materials, information, or expertise in order to achieve the desired performance or output (Cummings, 1978; Susman, 1976). Research shows that task interdependence affects the level of cooperation within a team (Shaw, 1973). Interdependent team members provide each other with information, advice, help, and resources. These processes can facilitate interpersonal interactions and team performance.

When task interdependence is high, team members have to share resources in order to attain goals and their actions are closely coordinated. When task interdependence is low, members work more independently. Different individuals, however, may have different perceptions of the degree to which tasks are interdependent. Perceived task interdependence is the extent to which employees perceive that their tasks depend on interaction with others and on others' tasks being completed (Campion et al., 1993; Kiggundu, 1981, 1983; Pearce & Gregersen, 1991). Interdependence may vary across teams, increasing as workflow goes from pooled to sequential to reciprocal to team (Saavedra et al., 1993; Thompson, 1967; Van de Ven, Delbecg & Koenig, 1976).

Thompson (1967) proposed a hierarchy of pooled, sequential, reciprocal, and team methods of exchange that reflect increasing levels of dependence among individuals for job performance as well as increasing needs for coordination. The lowest level of interdependence is the pooled interdependence, where each member makes a contribution to group output without the need for direct interaction among work group members. In pooled interdependence, group performance is the sum of individual performance. The next level is sequential interdependence, which requires group members to act one after

the other. For this type of task interdependence, group performance requires that each step be performed successfully and in the correct order. Reciprocal interdependence can be characterized by temporally lagged, two-way interactions (Van de Ven et al., 1976). The final level of task interdependence is team interdependence, where group members jointly diagnose, problem solve, and collaborate to complete a task. Task interdependence requires mutual interactions with group discretion to decide the particular course of inputs and outputs among members. Team members coordinate their actions to solve problems and complete their tasks. These four levels of task interdependence provide a method for conceptualizing the nature and extent of iterations and coordination and a referent for discussions of team process and performance (Bowers, Weaver, Urban, & Morgan, 1994).

Guanxi. According to Tsui and Farh (1997), the term guanxi is used to refer to a special relationship that develops between members within a team. As many researchers have pointed out, guanxi is one of the most striking features of Chinese culture (Fock & Woo, 1998; Law, Wong, Wang, & Wong, 2000; Pearce, 2000; Wong & Ricky, 1999). It is difficult to find an equivalent English word to accurately express the meaning of guanxi. Redding, Norman, and Schlander (1993) believe guanxi is "a network of personally defined reciprocal bonds." Chen (1996) believes that guanxi is a special kind of relationship comprised of obligation and reciprocity. In China, within a team or an organization, the distinction between the in-group and the out-group is particularly important. In-group members are those with whom one has strong guanxi (Li, Xin, & Tsui, 1999).

The term guanxi is actually quite loose in its meaning (Tsui & Gutek, 1999). It has two core meanings: relationships and connections. For the purpose of this research, we emphasize the "relationship" aspects of Guanxi. Tsui and Farh (1997) argued that guanxi is comprised of role obligation, friendship, and social definition. The term comes from the Confucian roots of Chinese society, which emphasize hierarchy and the need to maintain harmony (Cragg, 1995).

Guanxi links two individuals to enable a social interaction and exchange. For example, when one person offers a favor to another, the recipient must do an even bigger favor for him/her later. In continuing such a relationship, both people will benefit, and if the reciprocal relationship goes on and on, guanxi between them will be developed. Tsui and Farh (1997) agree with the notion proposed by Jacobs (1979): a basis for guanxi exists when shared attributes, identity, or origin exist among people. Wong, Tingsley, Law, and Mobley (2003) argued that the best indicators of guanxi are the actual activities or behaviors that occur among people.

Guanxi differs from team cohesion, which is the outcome of good interpersonal relationships. First of all, team cohesion has been primarily defined as an interpersonal attraction to the team or group (Lott & Lott, 1965). The main focus of team cohesion is the relationship between individual team members with their team. Guanxi, on the other hand, emphasizes the pairwise relationships between team members. Strong guanxi among all team members would promote team cohesion, but would not be the same as team cohesion. Secondly, team cohesion can be achieved by interdependent tasks, team success, or by pleasurable interpersonal interactions, which produce a desire to maintain affiliation with the team (Lott & Lott, 1965). Therefore, the emotional attachment and

commitment must be a necessary component for the concept of team cohesion. However, people who have strong guanxi may have a strong obligation to one another because of many other reasons such as identity, shared personal attributes, and so forth, yet they may not enjoy each other's company (Wong et al., 2003). In other words, teams high in guanxi may also be cohesive, but this is not assured.

Strong guanxi will be easily established when team members work with people who share the same attributes, identity, or have personal bonds with them. Development of guanxi is based on how well people know each other and how friendly they are to each other. Once strong guanxi is established between co-workers, subsequent outcomes such as interpersonal trust, loyalty, and favoritism will be produced. Research shows that guanxi is associated with leader-member exchange (Degluga, 1994; Scandura & Graen, 1984). Teamwork will become much easier because members are more willing to communicate, give feedback, and show cooperation to each other.

Preliminary Research

Given the cultural differences between Americans and Chinese, it is assumed that the underlying bases of teamwork might be different. Therefore, semi-structured interviews were conducted with Chinese people as a preliminary step in the preparation for this research. The intention was to discover the relevance of the team concept to China and gain suggestions for the best means to measure it. Interview responses were used to shape the model of teamwork tested in this research and described below.

Thirty individuals representing 10 teams were interviewed. These participants included 17 males and 13 females who were selected randomly from three different organizations operating in Beijing, China. The interviewees included team members and team leaders who work on teams in finance, marketing, human resources, manufacturing,

engineering, and general management. A mixture of open-ended and closed-ended questions was used to discover the most critical and essential conditions for effective Chinese teams and the challenges they face. To ensure that no important variables were omitted, some questions were derived from the variables identified by the team component model (Dickinson & McIntyre, 1997). The interview questions were developed in English, translated into Chinese, and then back-translated into English by another person. Standard blind translation procedures were used for both interview questions and answers (Brislin, 1986). I conducted individual interviews in Chinese. See Appendix A for the questions that were used.

Interview responses were analyzed for their thematic content. According to Bachiochi and Weiner (2002), content analysis is useful for any research approach that yields textual data. Researchers (Bachiochi & Weiner, 2002; Potter & Levine-Donnerstein, 1999; Stewart & Shamdasani, 1990) suggest using meaning categorization for content analysis. Several steps are involved. First the interview notes were reread and summary notes were written after each interview. Next, common themes in the notes about teamwork were identified based on literature, the researcher's knowledge, and other evidence in the notes. Then, each comment in each interview was coded according to the category scheme (Lee, 1999; Morgan, 1997). Finally, theme consistency and theme contradiction were checked.

Hypotheses

The current research was designed to identify the underlying dimensions of teamwork in Chinese organizations. According to the pilot interviews, however, not much difference was found between team definitions for Chinese and for Americans.

Chinese team members agreed that team and group are different from each other. Most key words from the definition by Salas et al. (1992) were identified in the interview. One thing that Chinese team members emphasize and value most is cooperation. To match the Chinese point of view, minor modifications were made to the adopted team concept (Salas et al., 1992). Thus, team is defined as a distinguishable set of two or more people who interact, dynamically, interdependently, and *cooperatively* toward a common and valued goal/objective/mission, who have each been reasonably assigned specific roles or functions to perform, and who have a limited life span of membership.

The model in Figure 1 is based on the framework developed by Dickinson and McIntyre (1997) as well other literature reviewed above. Dickinson and McIntyre (1997) state that these seven teamwork components from the teamwork components model are generic to all team tasks. According to the results of pilot-test interviews, team members identified some items of each component of the teamwork components model by Dickinson and McIntyre (1997). Based on literature and the results of pilot interviews, guanxi and task interdependence were identified to be important variables in teamwork process. Team members pointed out that guanxi among team members affects some key variables of teamwork process. The stronger the guanxi among team members, the more effective will be communications among them and the more feedback and backup behaviors will occur among them. On the other hand, poor guanxi can cause problems associated with these teamwork process variables.

In addition, Chinese team members think that the frequencies of presenting feedback and backup behaviors highly correlate with willingness to cooperate with each other. Due to the fear of making mistakes, many Chinese prefer not to provide backup to

their teammates. As Bruton, Ahlstrom, and Chan (2000) mention, foreign managers have much to complain about Chinese fear of doing things outside their role. The strong desire to maintain harmony in the team makes it difficult for Chinese people to provide accurate feedback, especially if it is negative or corrective. Feedback and backup behaviors would only be presented to enhance cooperation.

Based on above research and reasoning, the current study aimed to assess the fit of the model depicted in Figure 1 in two steps. First, the fit of the measurement model underlying the latent traits was assessed. Second, the expected relationships (paths) among the latent traits depicted in Figure 1 were assessed.

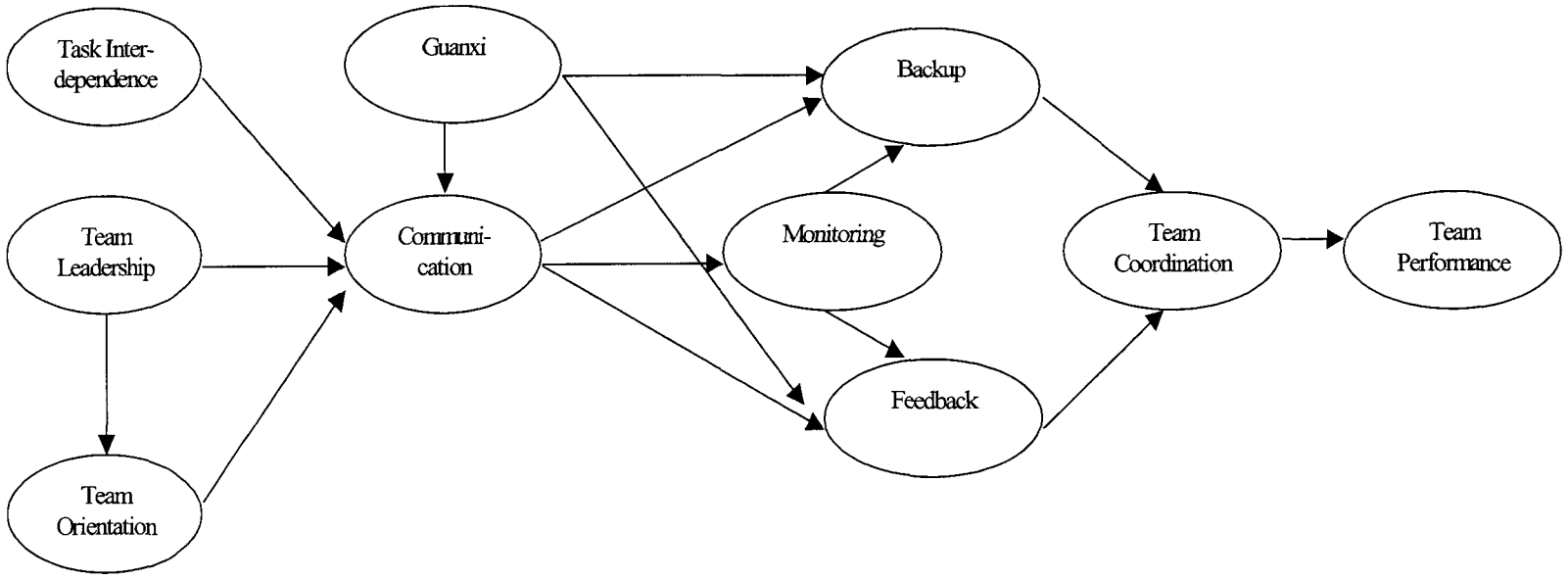

Figure 1. Hypothesized structural model of teamwork in Chinese organizations.

METHOD

The main purpose of this study was to develop and test a teamwork model in Chinese organizations. To meet this objective, a two-stage process was undertaken. First, the teamwork measurement model was tested prior to examining structural relationships. Only when the measurement model is established can the structural model be tested meaningfully (Anderson & Gerbing, 1988). According to Loehlin (1987), the measurement model describes paths connecting latent variables with their associated indicator variables. Although the psychometric properties of most the measures have been tested in US samples (e.g., Dickinson et al., 1992; Pearce & Gregersen, 1991; Rosenstein, 1994), participants from China may respond differently.

The second stage was to determine the structural relationships of the hypothesized model shown in Figure 1. There has been no research aimed at clarifying the causal relationships among these teamwork constructs using Chinese samples. The appropriate representation among task interdependence, Guanxi, and teamwork components has also not been studied.

Power Analysis

Sufficient sample size (N) is necessary to have adequate power to carry out planned hypothesis tests. Rather large sample sizes are required to yield meaningful results for parameter estimates using structural equation modeling (SEM) analysis. As the sample size increases, the precision of covariance estimates increases as well, which provides more reliable results from SEM analyses.

Quintana and Maxwell (1999) concluded that general guidelines for determination of sample size have been provided based on (a) number of participants required for statistical indices, (b) number of participants per parameter investigated, and (c) number of participants per degree of freedom. Some studies have shown that a minimum of 100 cases should be used in the latent variable analysis (Boomsma, 1982; Hu & Bentler, 1995). An alternative perspective on the issue of sample size involves the number of parameters being estimated by the model, or the size of the model (Bentler & Chou, 1987; Russell, Kahn, Spoth, & Altmaier, 1998). Bentler and Chou (1987) argued that the ratio of participants to parameters (N:t) should minimally be 5:1 when conducting a latent variable SEM analysis. According to Nunnally (1978), at least 10 participants for every hypothesized factor should used to achieve adequate statistical power.

Other researchers calculate sample sizes based on mathematical formulas. MacCallum, Browne, and Sugawara (1996), for example, presented a framework for hypothesis testing and power analysis in the assessment of fit of covariance structure models. Tables of minimum sample sizes are presented for test of goodness of fit. They demonstrated a compensatory relation between sample size and degrees of freedom (df). That is, small sample size can be compensated for by large degrees of freedom. Quintana and Maxwell (1999) suggested MacCallum et al.'s (1996) procedure should be used to determine sample size because they are mathematically justified. Following MacCallum et al.'s (1996) guidelines ($(df = p(p+1)/2) - q$, where p indicates manifest variables, and q is the number of distinct parameters to be estimated), we have $(10(10+1)/2) - 25 = 30$ degrees of freedom. However, MacCallum et al. (1996) pointed out that their guidelines are not appropriate for factor analytic studies, because testing items can result in models

with extremely large degrees of freedom (df > 2000 when the number of items is more than 70). With df = 2000, a power of .80 can be achieved with N = 23 (MacCallum et al., 1996, p. 144). In this study, we have 128 item and have df > 6000, which requires N < 23. That is obviously not practical.

A wide range of contradictory recommendations regarding sample size in factor analysis has been proposed. These guidelines typically are stated either in terms of the minimum necessary sample size, N, or the minimum ratio of N to the number of variables being analyzed, p. Some researchers (e.g., Gorsuch ,1983; Kline, 1979) recommended that N should be at least 100. Some other researchers noted that N > 200 is more desirable (Anderson & Geibing, 1984; Boomsma, 1982). Considering recommendations for the N:p ratio, Cattell (1978) believed the ratio should be in the range of 6 to 3. Gorsuch (1983) argued for a minimum ratio of 5. Tanaka (1987) argued that the ratio of N to t (the number of parameters) should be more important than ratios based on the number of measured variables. Bentler (1989) recommended that a 5:1 ratio of sample size to number of free parameters (N:t) is needed. However, rules positing minimum ratios of N to p or t have not supported by some later research (e.g., Marsh & Bailey, 1991). MacCallum, Widaman, Zhong, and Hong (1999) argued that the above recommendations regarding the issue of sample size in factor analysis are incorrect, and the necessary N depends on several aspects of a study. Quality of factor analysis solutions is not only affected by sample size, and also affected by communalities and overdetermination of factors (e.g., the ratio of the number of variables to the number of factors, p:r). The influence of sample size on quality of solutions will decline when communalities and overdetermination of factors improve. MacCallum et al. (1999)

concluded that good recovery of population factors could be achieved with N > 100 when there is high over-determination of factors (e.g., six or seven indictors per factor). Based on a series of studies, Marsh, Hau, Balla, and Grayson (1998) concluded that there is a compensatory relation between N and the ratio of indicators to factors (p:r). They stated further that using more indicators per factor would result in fewer nonconverged solutions, fewer improper solutions, greater interpretability, more accurate parameter estimates, and more reliable factors. Marsh et al. (1998) emphasized that confirmatory factor analysis should be conducted with moderate or large p/r and moderate or large Ns, and N < 200 should be avoided. Velicer and Fava (1994) suggested that 6 - 10 items per factor are good. In this study, we have at least 9 indicators per factor for all of the measures. Therefore, a sample size of N > 200 should be adequate to test the measurement model.

To obtain adequate samples for testing the structural model, both MacCallum et al.'s (1996) and Bentler and Chou's (1987) guidelines were used. With 30 degrees of freedom, at least 314 teams are needed to achieve power of .80 (MacCallum et al., 1996, p. 144, Table 4).

To select participants, two guidelines were used: (1) to ensure the representativeness of the sample, teams were sampled from large and small government-owned organizations and privately owned organizations, (2) the chosen organizations exhibited extensive use of teams.

Participants

Five organizations located in Beijing, China participated in the study. Originally 1789 individuals were asked to participate in the survey; 1657 individuals from 323

teams representing a variety of functions (manufacturing, management, technology, customer service, etc.) completed the questionnaires. The response rate was 92.6%. There were 328 supervisors and 1329 team members involved in these 323 teams. The size of the teams in the study ranged from 2 to 11 members. The sample was 69% (1136) men and 31% (521) women with a mean age of 37 years (SD = 7.41). Respondents represented a variety of team types and organizations. Table 3 presents the frequencies of demographic information of the participants and their teams. For instance, 15% of the teams came from a private technology company, 20% were from a national bank, 32% from a state-owned manufacturer, 9% from a non-profit organization, 24% from a privately-owned service company. The teams with the greatest representation in the study were manufacturing, technology, finance and statistics, marketing, management, and customer service. Some of the teams are formal units of the organization, and others are informal groups within a formal unit of the organization. The average team size was about 4, and the average length of team tenure was about 7 years. On average, team members had worked for the team for 5 years, and had worked for their organization for 10 years.

Procedure

Prior to the collection of data, I contacted the human resource managers of the five Chinese organizations that participated in the study. These managers briefly explained the purpose and nature of the study and asked employees of their organizations to participate; they agreed to help with the survey. The teams were randomly selected by casting lots within each organization.

Table 3

Summary of Demographic Characteristics

Organizations	Number of Team Members	Number of Teams
Private Technology Company	228	50
Bank	338	64
State-owned Manufacture Company	567	102
Non-profit Organization	165	30
Privately-owned Service Company	359	77

Team Type	Number of Team Members	Number of Teams
Administration	86	27
Customer service	134	32
Development and research	101	26
Finance and statistics	148	38
Maintenance	105	26
Manufacturing	201	43
Management	136	33
Marketing	138	32
Security	58	15
Technology	166	37
Training	11	46
Communication	10	3

Participant Characteristics	Mean	SD
Age	37 years	7.41
Length of Time as Team Member	4.55 years	3.32
Length of Time Team Exist	6.57 years	4.96
Length of Time as Organization Member	9.89 years	6.98
Number of Members on Team	4.12	6.45

A screening instrument was administered to each of the team leaders to determine if the group they led met the requirements of being a team. The screening instrument explored the essential characteristics according to the team definition for this research, and was partly based on the scale used by Rosenstein (1994; see Appendix B). One item asks, "Does your team include two or more people?" Another item asks, "Do all team members share a common and valued goal or mission?" Team members were asked to participate in the survey only when the answers to no fewer than six questions indicated that the team qualified for the research.

Surveys were administered on-site to one team at a time. All the team members (including team leaders) of each team were gathered to a conference room to finish the survey under the supervision of the researcher. The participants were informed that they would be asked about teamwork, task interdependence, and guanxi. During the time of distributing the survey, the researcher emphasized to each participant that the responses to the surveys were for research purposes only.

Each participant was given an envelope, which included a cover letter, an instruction sheet, an informed consent form, the questionnaires, and a demographic information sheet. The cover letter described the purpose and importance of the study. The instruction sheet described the concept of team and instructed participants to answer the questions based on their work team. Confidentiality of individual responses and their right to withdraw from the survey were addressed in both the cover letter and the informed consent form. The measurement instruments in the survey package included the team performance scale, the behavioral observation scales of teamwork components, task interdependence scale, and the guanxi scale. Finally, participants completed a 4-item

questionnaire of demographic information, which included items asking participants to state their age, gender, length of team membership, and the function of the team. Each scale in the package had its own instructions. The survey package (including the cover letter, the informed consent form, the instruction sheet, the questionnaires, and the demographic information sheet) is provided in the last section of Appendix C.

The team performance scale was administrated not only to team members and team leaders, but also to the supervisor or manager who oversaw the particular team (usually the department manager in Chinese organizations). To ensure that a certain team leader's ratings could be matched with the ratings of their team members, and with that of the supervisor's, an identification code was marked by the researcher before giving out each survey. An example of the code would be "Aa1", where "A" indicates the supervisor, "a" indicates a certain team leader, and "1" indicates a certain team member. These codes allowed identification of the composition of team membership. All respondents were anonymous. After completing the questionnaire, participants were instructed to place it in the envelope and return it to the researcher. Questionnaire completion required about 30 minutes. All questionnaires were printed in Chinese. The participants were thanked for finishing the survey. No compensation was provided.

Measures

Available measures designed to measure task interdependence, guanxi, team performance, and teamwork components were administrated to participants. The measures that were used have been assessed in previous research and have been shown to be both reliable and valid (e.g., Pearce & Gregersen, 1991, Rosenstein, 1994). The questionnaires for this study were initially prepared in English, then translated into

Chinese by the investigator, and then back-translated by another Chinese person who has a graduate-level degree in Human Resource Management. Standard blind translation procedures were used (Brislin, 1986).

Outcome variables. We used multiple measures to operationalize team performance to maximize criterion relevancy. The first measure of team performance (Team Performance 1) is a 5-item scale, and has been previously used by both American and Chinese researchers (Hui, Law, & Chen, 1999; Tjosvold et al., 2003; Tjosvold & Yu, 2004; Williams, 1988). Response choices range from 1 (*strongly disagree*) to 5 (*strongly agree*). The second measure (Team Performance 2) we used for assessing team performance was developed by Rosenstein (1994). The self-report measure contains 9 items and uses a five-point agreement type scale. We also assessed the overall performance of each team by using a rating of team effectiveness employing a 5-point scale (1 = *somewhat below requirements,* 5 = *consistently exceeds requirements*) for seven items that were adopted from the measure of team performance developed by Barrick, Stewart, Neubert, and Mount (1998; Team Performance 3). All three team performance measures are provided in the first section of the questionnaire in Appendix C. To avoid common method bias in evaluating performance (Felson, 1981; Frone, Adams, Rice & Instone-Noonan, 1986) and to provide the added benefit of enhanced reliability due to the availability of multiple rating sources, team performance data were collected from team members, team leaders, and the supervisor who is in-charge of the teams. Since strong coherence was achieved, the average score across all the raters was used as the final rating of team performance. The internal reliability coefficient of the

combined measure of team performance was found to be .91 in the current study. Further discussion on inter-rater reliability is provided below in the results section.

Teamwork components. The Teamwork Components Rating Scales (Rosenstein, 1994) were adapted to measure six components of teamwork in the team process model developed by Dickinson and McIntyre (1997). These components include leadership, team orientation, communication, monitoring, feedback, back up, and coordination. Internal consistency reliability indices for the teamwork subscales in this research range from .75 (monitoring) to .90 (team orientation). Team members as well as team leaders rated each item of these teamwork components according to its frequency of occurrence using a 5-point scale (ranging from 1 = *almost never* to 5 = *almost always*). The measures are included in the third section of Appendix C.

Task interdependence. To measure task interdependence, a scale developed by Pearce and Gregersen (1991) was used to assess the degree to which members work with others to plan and execute their tasks. Team leaders and team members responded to 8 items using 5-point *agree-disagree* scales. The scale is composed of two dimensions. The first dimension collectively reflects reciprocal interdependence. The second dimension reflects independence, which indicates whether respondents rely on others to complete their tasks. This scale has been widely used by previous researchers (e.g., Allen, Sargent, & Bradley, 2003; Liden, Wayne, Jaworski, & Bennett, 2004; Van der Vegt, Emans, & Van de Vliert, 2001). The reliability coefficient of this scale was found to be .82 in this study. The items are provided in the fourth section of Appendix C.

Guanxi. The broader definition of guanxi refers to the quality of relationship between two or more parties that are not linked with particular ties (Alston, 1989; Davies,

Leung, Luk, & Wong, 1995; Leung, Wong, & Wong, 1996). Based on this notion, Wong et al. (2003) developed a scale to measure guanxi by examining joint activities among people that go beyond the interactions required by work roles. This 15-item measure reflects five sub-dimensions with 3 items on each of them: social activities, financial assistance, self-sacrificing, celebrating special events, and mutual emotional support. Team members as well as team leaders were required to respond to this guanxi measure using a 5-point scale (1 = *very unlikely* to 5 = *very likely*). The reliability coefficient of the scale is .84. The items are provided in the second section of Appendix C. Wording modifications were made to serve the situation of this project, for example, the sentence "exercise with him/her" was changed to "exercise with other team members." Participants rated the likelihood of social activities with their teammates in general.

Level of Analysis and Aggregation

In team research, an important concern is the evaluation of individual vs. collective contributions. It is simplistic to merely focus on individual contributions. Dickinson et al. (1992) argued that it is important to obtain global-level measures of teamwork to better understand its relationship with global measures of team performance. On the other hand, if we simply evaluate the product of a team as a whole, we are assuming that each member contributed equally to the collective product (Tesluk, Mathieu, & Zaccaro, 1997). According to the definition of a team adopted in this research, the behavior of one team member depends on the behavior of other team members, and the output of one team member is the input for another team member. Both individual-level and team-level behaviors should be assessed in this setting (DeNisi,

2000). Therefore, data were collected at the individual level and then aggregated to reflect characteristics of the team level for data analysis.

Aggregation may lead to better reliability of measures. Distinctions generally can be made between global, shared, and configural constructs (Kozlowski & Klein, 2000). Chan (1998) identified different forms of composition: additive, direct consensus, referent-shift, dispersion, and process composition. In additive models, variance across the units is not considered, and the aggregate phenomena represent the sum or average of the components at the individual level. In the direct consensus models, the aggregate phenomena only exist through within-group agreement. Additive and direct consensus models are most common in I/O psychology (Hofmann, 2002). Referent-shift models differ from direct consensus models in that the referent of the survey item shifts from individual level to team level. A dispersion model uses the level of agreement within a team as a construct, while a process model emphasizes the dynamic and interactive nature of collective constructs. The behavioral observation scales including teamwork behaviors, task interdependence, and guanxi in this study are readily amenable to either direct consensus or referent-shift composition models (Chan, 1998; Rosenstein, 1994). Tesluk et al. (1997) indicate that data on team communication and coordination are often collected through members' ratings and then aggregated (i.e., averaged) to form a single score that describes the team's level of communication and coordination.

Aggregation must be justified theoretically and statistically (George & James, 1993; Kenny & La Voie, 1985; Roberts, Hulin, & Rousseau, 1978; Rousseau, 1985; Tesluk et al., 1997). First, an appropriate theoretical rationale is required for considering the variable a team-level construct. Second, the measures must specifically refer to team

properties so that individual level data can be matched to team level data. Third, measurement properties and validity of team-level variables should be addressed at their proper level of analysis.

To ensure construct validity for the unit-level construct, the units of aggregated data need to empirically demonstrate adequate within-group agreement (Rousseau, 1985). Within-team agreement reflects the degree to which raters provide essentially the same rating (Bliese, 2000; Kozlowski & Hattrup, 1992). Rousseau (1985) suggests that within-unit agreement should be determined before aggregation. The individual-level perceptions do not become team-level perceptions until they are shared and agreed upon (Hofmann, 2002).

The most commonly used measure of within-group agreement is r_{wg} (James, Demaree, & Wolf, 1984; James, Demaree, & Wolf, 1993; Schmidt & Hunter, 1989), which is calculated by comparing the group variance to the expected random variance (Bliese, 2000). According to James et al. (1984, 1993), this index of agreement provides a statistical measure of the degree to which a team shares consensus about a certain stimulus (e.g., an item). In this research, r_{wg} was calculated using the formula for a multiple item scale (James et al., 1993). That is:

$$R_{wg(j)} = \frac{J\left[1-\left(ms_{xj}^2 / \sigma_{eu}^2\right)\right]}{J\left[1-\left(ms_{xj}^2 / \sigma_{eu}^2\right)\right]+ms_{xj}^2 / \sigma_{eu}^2}$$

where ms_{xj}^2 is the mean of the observed variances of the items, σ_{eu}^2 is the expected variance given distributional assumptions and number of scale points, and J is the number of items.

Another approach is to contrast within-group variance to between-group variance using analysis of variance (ANOVA). The intraclass correlation coefficient (ICC) is an ANOVA-based measure, and can be used as a reliability index (Bliese, 2000). With the Bartko (1976) formula, ICC can be calculated as follows:

$$\text{ICC}(1) = \frac{MSB - MSW}{MSB + [(K-1) * MSW]}$$

where *MSB* is the between-group mean square, *MSW* is the within-group mean square, and *k* is the group size. Within-group agreement can also be obtained through the calculation of the correlation ratio (η^2), a measure of strength of relationship. Like ICC, η^2 can be computed from a one-way random-effects ANOVA, which is between-groups sum of squares divided by total sum of squares. Bliese and Halverson (1998) argued that η^2 is very sensitive to team size. When team sizes are large (bigger than 25), η^2 equals ICC, but when team sizes are small, η^2 shows significant inflation.

Hofmann (2002) says that researchers should use a variety of procedures to present evidence for aggregation. Thus, ICC, r_{wg} and η^2 were all used to support aggregating the data. As a rule of thumb, the aggregation is justifiable when r_{wg} is .70 and higher, and when the F-test is significant for both ICC and η^2 (Klein, Bliese, Kozlowski, Dansereau, Gavin, Griffin, Hofmann, James, Yammarino, & Bligh, 2000). The same F-test was used to evaluate both ICC and η^2 (Klein et al., 2000). Based on the results of these aggregation measures, the team scores were obtained by calculating a mean score for each team based on the responses of individuals that comprise the team. The evidence for aggregation is provided below in the results section.

Data Analysis

Subscale construction. According to Drasgow and Kanfer (1985), polychotomously scored items can't be normally distributed. To deal with the violation of normality problem, the items for each scale were organized to form three subscales, and each subscale had three to seven items (Rosenstein, 1994). The subscale score of a particular scale was the mean score of the item ratings for the subscale. Subscales were used to indicate manifest variables.

Component scale analysis was used prior to forming subscales. Maximum likelihood confirmatory factor analyses were performed on both individual level and team level data to access the quality of the items. A single factor was specified to fit all the items to create multiple indicators (subscales). Both individual and team level results were considered in the process of deciding whether items should be retained. According to Comrey and Lee (1992), the cutoff score of factor loadings are as follows: .71 (and above) are considered excellent, .63 very good, .55 good, .45 fair, and .32 (and under) poor). Thus, the items that demonstrated loadings of less than.45 were dropped before forming subscales.

Mathieu's (1991) strategy was used to construct three parallel subscales for each latent variable (factor). That is, the item with the highest loading on the factor was paired with the item with the lowest loading on the factor to form the first subscale. The second highest loading item was paired with the second lowest loading item to form the second subscale. The third subscale included the items with the third highest loading and the items with the third lowest loading. Finally, the remaining items were randomly assigned

to all three subscales. This procedure has been used in previous research, such as Brooke, Russell and Price (1988), Mathieu and Farr (1991), and Rosenstein (1994).

Reliability. Since all the instruments in this study were used in previously published research, acceptable reliabilities were already established. Further testing using the present sample provided additional assessment of the content validity, which is a form of construct validity (Schwab, 1980). In testing the measurement model, some researchers prefer the composite reliability measure to the traditional measure of coefficient alpha because it gives a truer indication of reliability by taking into account the possibility that the indicators may have different factor loadings and error variances (Devellis, 1991; Werts, Linn, & Joreskog, 1974). Standardized reliability estimates measure was used to assess the reliability index of subscales as well as factors. Based on the formula proposed by Wert et al. (1991), the standardized reliability was calculated as:

$$r = \frac{\left(\sum_i^p \lambda_{ij}\right)^2}{\left(\sum_i^p \lambda_{ij}\right)^2 + \sum_i^p V(\delta_i)}$$

where λ_{ij} is the factor loading parameters, and $V(\delta_i)$ is the error variance, and p is the number of observed variables of the construct. Completely standardized parameters were used in this research (Sharma, 1996). Devellis (1991) reported that reliabilities greater than .60 are acceptable, while Nunnally (1978) believed that .70 is the cutoff score for acceptable reliability.

Measurement model. We used LISREL 8.51 program to test hypotheses (Jöreskog & Sörbom, 1993; 1996). This method allows one to identify latent variables and structural equation coefficients simultaneously. After aggregating the individual-level data to the team-level, the data analysis was conducted at the team level. As

mentioned previously, a two-stage structural equation modeling approach was employed. The first step is to estimate a measurement model to establish construct validity with all the teams. In order to demonstrate construct validity, a scale needs to contain only theoretical construct domain without any extraneous constructs (Nunnally, 1978). Thus, confirmatory factor analysis (CFA) with a maximum likelihood estimation method was used to test goodness of fit of the measurement models for all the constructs. Estimates of goodness-of-fit were calculated for the measurement model assessing both the independent latent variables and the dependent latent variables. One objective of this research was to establish construct validity of the teamwork measures used in this study.

Structural model. We used the LISREL 8.51 to test the proposed model. LISREL is able to simultaneously evaluate the relationship among independent latent variables and dependent latent variables, and to estimate the goodness of fit of the structural model (Hair, Anderson, Tatham, & Black, 1995). The significance level is determined using the standard normal distribution. A path with a *t*-value greater than 2.00 is considered significant at $p < .05$. The overall chi-square statistic and goodness of fit indices were used to assess the model fit. Modification indices were also examined in order to improve the model.

Fit indices. The Chi-square statistic was used to test the overall fit of the measurement model. Chi-square measures the distance (difference, discrepancy, deviance) between the covariance (correlation) matrix that came from the sample data and the fitted covariance (correlation) matrix. A non-significant chi-square indicates a good fit. The chi-square statistic is very sensitive to large sample sizes, therefore researchers tend to use the chi-square to degree of freedom ratio as an index of model fit

(Bollen, 1989; Hair, et al., 1995). The desired ratio of chi-square to degrees of freedom is less than 2.00 (Tabachnick & Fidell, 2001). In addition to chi-square, four other model fit measures were examined to assess the overall fit of the measurement models and the structural models. Goodness of fit index (GFI) measures the relative amount of variance and covariance that are accounted for by the model (Bentler, 1983; Joreskog & Sorbom, 1984). It assesses how much better the model fits as compared to no model at all. Values are between 0 and 1, with scores greater than 0.90 indicating an acceptable fit. Bentler's comparative fit index (CFI) measures how much better the model fits compared to a baseline model (Bentler, 1990). Values should lie between 0 and 1 (although values can lie outside these values), with scores greater than 0.90 indicating an acceptable fit. Non-normed fit index (NNFI), known as Tucker-Lewis Index (Tucker & Lewis, 1973), is an index that takes into account degrees of freedom. Again, a score greater than 0.90 is considered an indication of good fit, and values are not restricted to lie between 0 and 1. Root mean square error of approximation (RMSEA) takes parsimony into consideration (Steiger, 1990). The lower the RMSEA score the better, with below .06 suggesting a close fit and below .08 suggesting an acceptable fit (Hu & Bentler, 1999).

RESULTS

Prior to data analysis, outliers were checked. There were few missing data (under 1%), so this does not pose a problem in this research. Ten cases with a large amount of missing data were dropped. In the section, I first describe descriptive characteristics of the data. Then I discuss evaluation the aggregation indices, the fit of the measurement model, and the fit of the proposed structural model. Finally I discuss whether the results confirm the research hypotheses. The unit of analysis of this study is team, therefore all the results provided here are the team-level results. Data analysis was also conducted at the individual level to help in identifying poor items.

Descriptive Analyses

The goal of this research is to test the relationships among 10 latent variables (constructs) depicted in Figure 1. Three independent latent variables include guanxi, task interdependence, and team leadership. Seven dependent latent variables include team orientation, communication, backup, monitoring, feedback, team coordination, and team performance. Means, standard deviations, and intercorrelations among latent variables are presented in Table 4. Note that the intercorrelations reported in Table 4 are the factor correlations from the measurement model and the structural model.

Team performance data came from three different scales and rating sources (team members, team leaders and supervisors). All the items from three different scales were combined into one single measure. Correlations among different rating sources across the scales were calculated. The mean correlations among three different sources are reported in Table 5. All of these correlations are statistically significant.

Table 4

Means, Standard Deviations, and Intercorrelations among the Latent Variables

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Guanxi	3.45	.50	___									
2. Task interdependence	3.60	.44	.51*	___								
3. Team leadership	3.58	.48	.60*	.49*	___							
4. Team orientation	3.61	.49	.69*	.59*	.85*	___						
5. Communication	3.56	.50	.66*	.56*	.79*	.77*	___					
6. Backup	3.50	.49	.71*	.57*	.77*	.75*	.69*	___				
7. Monitoring	3.44	.44	.65*	.55*	.78*	.74*	.62*	.68*	___			
8. Feedback	3.42	.46	.69*	.56*	.76*	.74*	.70*	.78*	.70*	___		
9. Team coordination	3.60	.53	.76*	.61*	.75*	.72*	.71*	.72*	.63*	.72*	___	
10. Combined team performance	3.54	.47	.70*	.56*	.76*	.68*	.62*	.64*	.64*	.63*	.72*	___

Note. $N = 312$. * $p < .05$.

Table 5

Intercorrelations among Different Rating Sources

Rating Sources	1	2	3
1. Supervisors	1.00		
2. Team leaders	.40*	1.00	
3. Team members	.41*	.36*	1.00

Note. $N = 312$. * $p < .05$.

The correlations shown in Table 5 suggest that ratings on team performance from three different sources are correlated and definitely different. The subscales were created using the team performance data combined from all three scales. According to results of the measurement model, high factor loadings and reliability were achieved for this combined measure. Therefore, team performance in the following section indicates the combined team performance variable.

Aggregation

To assess agreement among team members, the $r_{wg(J)}$ index of within-group agreement was calculated for each team. A value of .70 or higher indicates acceptable agreement among team members, and a negative value indicates the within-group variance exceeds the expected variance (Brown, Kozlowski, & Hattrup, 1996). If the agreement index on at least seven out of ten scales was equal to or greater than .70, the team was used as the unit of analysis. Based on the results of the $r_{wg(J)}$ agreement index,

11 teams were dropped from subsequent analysis. The r_{wg} values for each team on all scales are included in Appendix D.

In addition, the intraclass correlation coefficient (ICC1) and η^2 were calculated to justify aggregation to the group level. ICC is calculated as the ratio of between-group variance to total variance and yields a single value for the entire sample (Bliese, 2000). Aggregation is warranted when the F-test is significant for both ICC and η^2 (Klein et al., 2000). A statistically significant F-test indicates that the between-group variance of a measure is significantly greater that the within-group variance of the measure (Klein et al., 2000). Higher ICC values suggest that team members share the construct to a greater extent (Bliese, 2000). The values of ICC, η^2 as well as the F value for ten scales used in the model are included in Table 6. Due to small team size (mean = 4.12), η^2 values showed inflation and are .43 or greater. As we can see, all values for the ten scales are statistically significant at $p < .01$, which indicates that team membership explains considerable variance in each of the ten measures. Thus, for all of the ten measures, aggregation to the team level was justified.

Measurement Model

A two-stage strategy outlined by Anderson and Gerbing (1998) was used for data analysis in this study. The first stage is to use confirmatory factor analysis to test the fit of the measurement model to the observed data. The second stage is to evaluate the fit of the hypothesized structural model.

Confirmatory factor analysis. Maximum likelihood confirmatory factor analysis was performed on individual-level and team-level data before the analysis of the measurement model and structural model.

Table 6

ICC and Eta-Squared (η^2) Values for the Component Scales

Component Scales	$\overline{r_{wg}}$	ICC	η^2	*dfs*	F
Guanxi	.74	.31	.50	(322, 1001)	3.18*
Task interdependence	.73	.26	.46	(322, 1005)	2.65*
Team leadership	.73	.25	.46	(322, 995)	2.59*
Team orientation	.74	.29	.48	(322, 1000)	2.93*
Communication	.72	.28	.46	(322, 1004)	2.68*
Backup	.73	.30	.48	(322, 1004)	2.86*
Monitoring	72	.23	.43	(322, 1005)	2.39*
Feedback	.71	.27	.44	(322, 1004)	2.51*
Team coordination	.74	.28	.48	(322, 1005)	2.88*
Team performance	.76	.29	.46	(322, 1319)	3.55*

Note. * $p < .01$.

One factor was specified for each component scale. Items with loadings of .45 or lower were eliminated from further analyses (Comrey and Lee, 1992; Tabachnick & Fidell, 2000). Since data analyses from both individual level and team level yielded similar results, only the outputs of the factor analysis at the team level are presented. Results of confirmatory factor analysis are shown in Appendix E. After weak items were removed, 29 subscales were constructed using Mathieu' s (1991) strategy. Three parallel subscales represent indicators of each of the components, except for task interdependence, which was represented by two subscales. Eliminated items and subscale

items are presented in Table 7. Means, standard deviations, and intercorrelations among the subscales are presented in Appendix F.

Reliability. Highly reliable scales are desired because they demonstrate that the items are measuring the same concept. Coefficient alpha (Cronbach, 1951) is an accurate and most commonly reported measure of reliability only if the test items are essentially tauequivalent (Lord & Novick, 1968). When estimating scales that have different true score and different measurement error variances, coefficient-alpha may lead to biased reliability estimates (Komaroff, 1997; Murphy & DeShon, 2000; Osbourn, 2000; Zimmerman, Zumbo & Lalonde, 1993). Therefore, the formula proposed by Wert et al. (1991) could be used to conduct reliability analysis. Based on the results of CFA, a reliability coefficient was calculated for the subscale as well as for the entire scale. Reliability coefficients are presented in Table 8. As we can see in the table, the reliability coefficients of the subscales range from .72 (subscale 1 for monitoring) to .92 (subscale 1 for team performance). Reliabilities of the entire scale range from .75 (monitoring) to .91 (team performance), all of which are greater than the cutoff score of .70 suggested by Nunnally (1978).

Measurement model. As suggested by previous research, separate measurement sub-models should be specified for independent latent variables and dependent latent variables, which are simultaneously estimated with the structural model (Anderson & Gerbing, 1988; Joreskog & Sorbom, 1984, pp. I.5-6). The measurement model for the independent latent variables included the three indicators (observed variables) for guanxi, the two indicators for task interdependence, and the three indicators for team leadership.

Table 7

Summary of Subscale Construction and Item Elimination

Component Scales	Subscale1 Items	Subscale2 Items	Subscale3 Items	Removed Items
Guanxi	3, 6, 1, 10, 14	4, 5, 2, 12, 15	11, 7, 9, 13	8
Task interdependence	2, 5, 3, 7	1, 8, 4		6
Team leadership	13, 1, 2, 9, 12, 16	4, 6, 3, 10, 14	5, 7, 8, 11, 15	17, 18
Team orientation	1, 20, 3, 6, 10, 14, 18	13, 15, 4, 7, 11, 16, 19	2, 8, 5, 9, 12, 17	
Communication	9, 1, 4, 10	3, 5, 6, 11	8, 2, 7	
Backup	4, 3, 7	5, 1, 8	6, 2, 9	
Monitoring	2, 7, 5	1, 4, 8	3, 6, 9	
Feedback	6, 3, 2	9, 1, 4	5, 7, 8	
Team coordination	8, 3, 1	2, 5, 4	6, 9, 7	
Team performance	14, 19, 1,7, 10, 13, 17	6, 4, 2, 8, 11, 15, 18	21, 20, 5, 9, 12, 16	3

Table 8

Factor Loadings, Standard Errors, t-values, R^2, and Reliability Coefficients in the Measurement Model

Variables	Factor Loading	*t*-values	Theta delta	R^2	Reliability of Indicators	Reliability of Scales
Guanxi						.84
GX1	.95	22.23	.11	.89	.86	
GX2	.95	22.53	.09	.91	.85	
GX3	.92	21.10	.16	.84	.82	
Task interdependence						.82
TI1	.88	18.76	.22	.78	.90	
TI2	.95	21.09	.09	.91	.74	
Team leadership						.88
TL1	.95	22.67	.09	.91	.89	
TL2	.94	21.91	.12	.88	.88	
TL3	.95	22.37	.10	.90	.88	
Team orientation						.90
TO1	.95	22.83	.09	.91	.89	
TO2	.96	23.00	.08	.92	.91	
TO3	.96	23.07	.08	.92	.90	
Communication						.83
COM1	.93	21.49	.13	.86	.85	
COM2	.94	21.81	.12	.88	.85	
COM3	.89	20.13	.21	.79	.81	
Backup						.80
BUP1	.89	20.13	.20	.79	.78	

Table 8 *(continued)*

Variables	Factor Loading	*t*-values	Theta delta	R^2	Reliability of Indicators	Reliability of Scales
BUP2	.91	20.74	.17	.83	.81	
BUP3	.91	20.86	.17	.79	.80	
Monitoring						.75
MON1	.90	19.75	.17	.83	.72	
MON2	.87	19.17	.23	.77	.76	
MON3	.87	18.71	.25	.75	.77	
Feedback						.76
FB1	.89	19.83	.20	.80	.76	
FB2	.81	17.52	.32	.67	.76	
FB3	.82	17.10	.34	.66	.78	
Coordination						.86
COOR1	.90	20.86	.17	.82	.86	
COOR2	.91	21.11	.16	.84	.86	
COOR3	.91	20.82	.17	.83	.86	
Team performance						.91
TP1	.96	23.08	.07	.92	.92	
TP2	.95	22.72	.09	.91	.91	
TP3	.95	22.51	.10	.90	.91	

Note. N = 312. Abbreviations are: GX = Guanxi, TI = Task Interdependence, TL = Team Leadership, COM = Communication, BUP = Backup, MON = Monitoring, FB = Feedback, COOR = Coordination, TP = Team Performance. All *t*-values are sufficient.

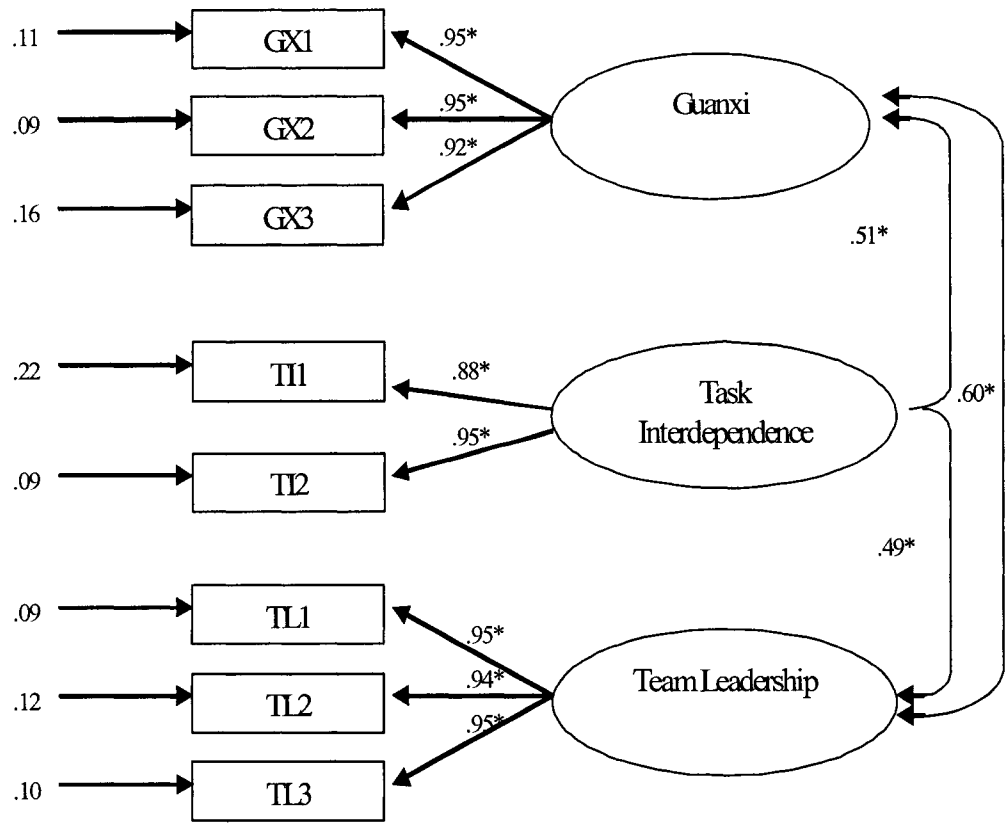

Figure 2. Measurement model for the independent latent variables ($N = 312$, $*p < .05$).

An acceptable fit was achieved for the measurement model of independent latent variables, $\chi^2(17, N = 312) = 26.13, p > .05$. The χ^2 to *df* ratio equals 1.54, which is less than the recommended cutoff value of 2.00 (Tabachnick & Fidell, 2001). The GFI = .98, CFI = 1.00, NNFI = .99, and RMSEA = .04, all of which indicate good fit for this measurement model. Table 8 shows the factor loadings, *t*-values for the factor loadings, values of Theta Delta, and the squared multiple correlations (R^2) for indicators of the latent independent variables in this measurement model. Figure 2 shows the path diagram of the measurement model for the completely standardized solution.

As we can see from Table 8 as well as Figure 2, the factor loadings are extremely high, and the *t*-values for all of the parameter estimates of each of the components are greater than 2.00, which demonstrate statistical significance. The values of Theta Delta range from .09 to .22, which indicate that the amount of measurement error variance in the model is small. The latent independent variables: guanxi, task interdependence, and team leadership are all significantly correlated ($p < .05$). The squared multiple correlations (R^2) indicate substantial subscale variance explained by the model. The values of the R^2 range from .78 to .91, which indicate a high percentage of the variance in the independent indicators that can be attributed to the latent independent variables rather than to measurement error.

In the measurement model for the dependent latent variables, 21 indicators were specified for 7 factors including team orientation, communication, backup, monitoring, feedback, coordination, and team performance. The results of the measurement model are: $\chi^2(168, N = 312) = 492.38, p < .05$, GFI = .82, CFI = .94, NNFI = .94, and RMSEA = .10. The χ^2 to *df* ratio is greater than 2.00.

According to the modification indices, fit would improve if parameters reflecting correlated measurement error were free to be estimated. After correlated measurement errors were estimated, the results for the measurement model yielded a satisfactory fit, χ^2 (157, N = 312) = 274.17, $p < .05$, GFI = .94, CFI = .99, NNFI = .98, and RMSEA = .05. The χ^2 to df ratio equals 1.75, which is smaller than the recommended value of 2.00. The chi-squared difference, $\Delta\chi^2$ (11) = 218.21, is statistically significant ($p < .01$), which demonstrates that the model was significantly improved by allowing correlations among the measurement errors to be estimated. This revised measurement model are incorporated in the hypothesized structural model.

The factor loadings, t-values for the factor loadings, values of Theta Delta, and the squared multiple correlations (R^2) for each indicator of the latent dependent variables are also included in Table 8. The path diagram of the measurement model for the dependent latent variables for the completely standardized solution is shown in Figure 3. The factor loadings for the measurement model of the dependent latent variables are statistically significant at $p < .05$, ranging from .81 to .96. The latent dependent variables are all significantly correlated with each other. The values of Theta Delta range from .08 to .34, which demonstrate a small amount of measurement error variance in this measurement model. The values of the R^2 are generally high, ranging from .66 to .92. Although this revised measurement model yielded a good fit, there are a few sizable residuals. Anderson and Gerbing (1988) argued that normalized residuals are considered large when they are greater than 2 in magnitude.

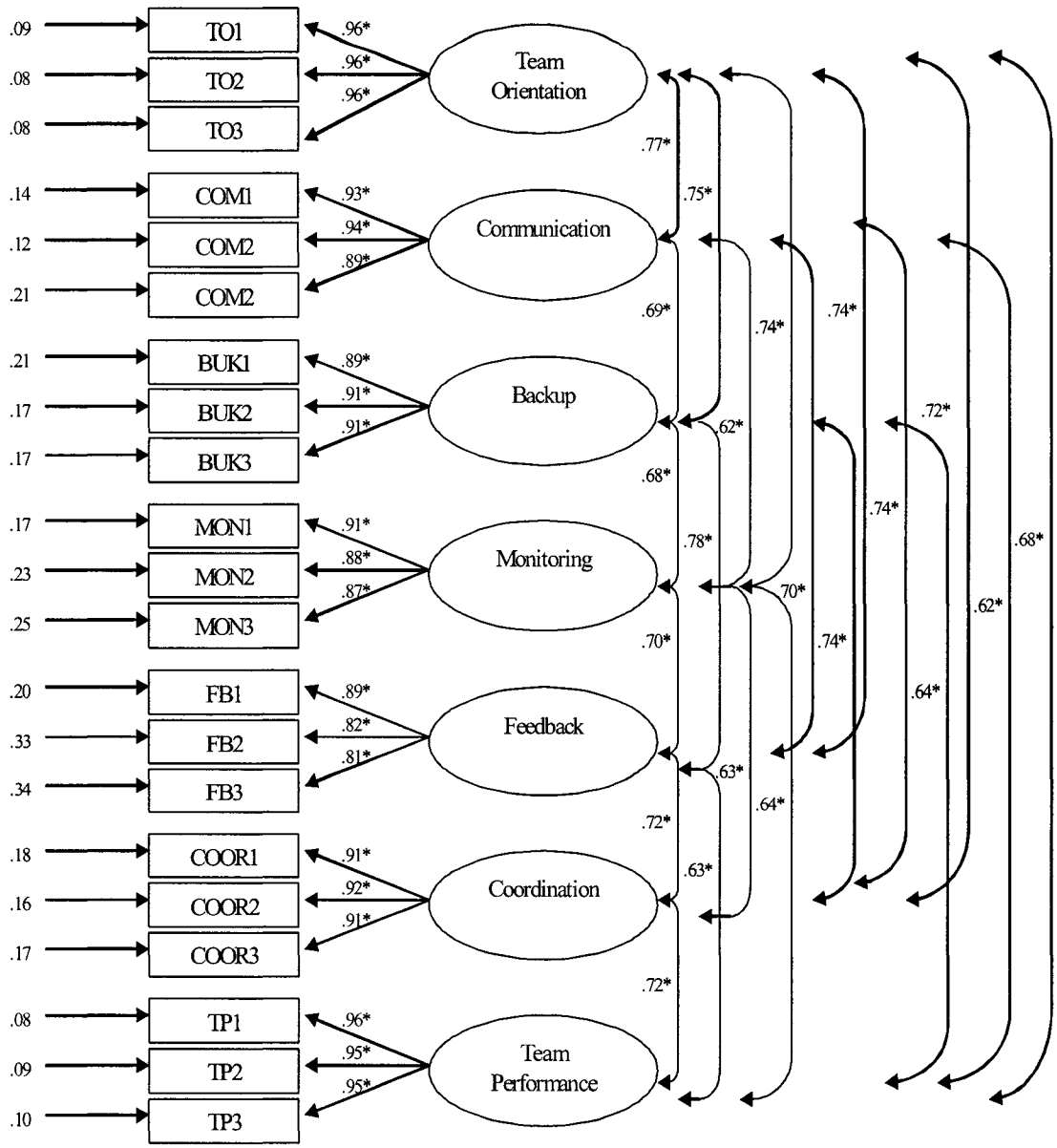

Figure 3. Measurement model for the dependent latent variables ($N = 312$, $*p < .05$).

According to the results of this measurement model, there are several relatively large positive residuals including the one between FB2 and TP2 (3.22), the residual between FB2 and COM2 (2.70), the residual between FB2 and MON2 (2.43), the residual between MON1 and BUK1 (2.58), the residual between TC1 and TP1 (2.72), the residual between TC1 and TP2 (3.33), the residual between TC1 and TP3 (2.23). The large negative residuals include the residual between TP2 and MON1 (-3.80), the residual between TC1 and MON1 (-3.34), the residual between TP1 and MON1 (-3.19), the residual between TP2 and FB2 (-2.80), and the residual between TP2 and BUK1 (-2.21). These residuals have a median of .012.

Structural Model

Maximum likelihood factor analysis was used with LISREL 8.51 to assess the fit of the structural model. A moderate fit to the data was achieved. The results are as follows: χ^2 (328, N = 312) = 678.96, $p < .01$, GFI = .87, CFI = .97, NNFI = .96, and RMSEA = .06. The χ^2 to df ratio equals to 2.07, which is slightly greater than 2.00; all the goodness-of-fit indices indicate adequate fit for the model except for the GFI. Therefore, we conclude that the hypothesized model is a marginally good fit for the data. The parameter estimates with completely standardized solutions and the squared multiple correlations are presented in Figure 4. As we can see from Figure 4, the following relationships are not significant: task interdependence → communication, team orientation → communication, guanxi → communication, and communication → feedback. All the other 11 hypothesized relationships are significant, and the beta (β) or gamma (γ) values range from .21 (guanxi → monitoring and guanxi → feedback) to 2.35 (backup → team coordination).

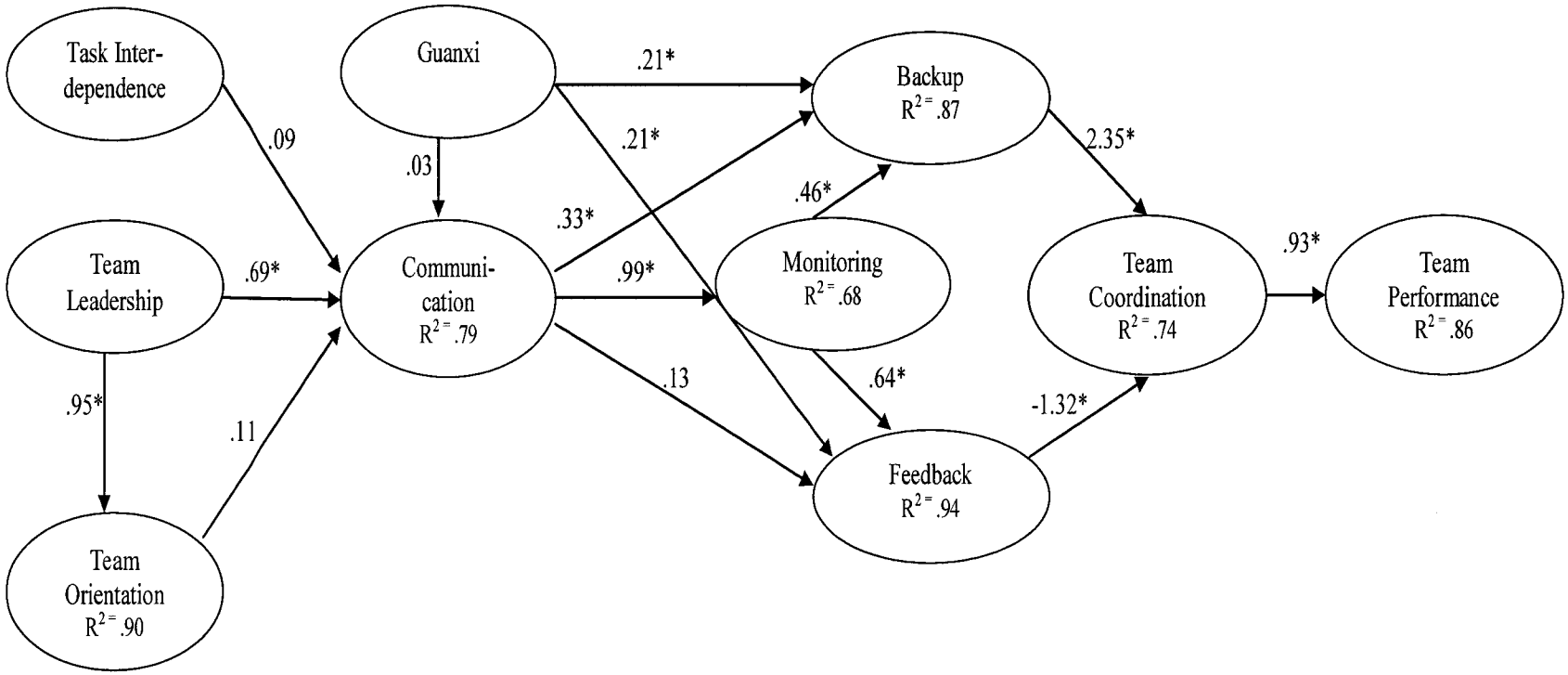

Figure 4. Path diagram displaying standardized coefficients for the hypothesized model ($N = 312$, $*p < .05$).

Table 9

Standardized Indirect Effects among the Dependent Latent Variables in the Hypothesized Model

	Team orientation	Communication	Backup	Monitoring	Feedback	Team coordination	Team performance
Team orientation	--	--	--	--	--	--	--
Communication	--	--	--	--	--	--	--
Backup	.08	.45*	--	--	--	--	--
Monitoring	.11	--	--	--	--	--	--
Feedback	.08	.63*	--	--	--	--	--
Team coordination	.09	.83*	--	.23*	--	--	--
Team performance	.08	.77*	2.18*	.22*	-1.22*	--	--

Note. * $p < .05$.

Table 10

Standardized Indirect Effects among the Independent and Dependent Latent Variables in the Hypothesized Model

	Guanxi	Task interdependence	Team leadership
Team orientation	- -	- -	- -
Communication	- -	- -	.10
Backup	.03	.11*	.62
Monitoring	.03	.09	.78*
Feedback	.03	.07	.61*
Team coordination	.21*	.08	.66*
Team performance	.24*	.07	.61*

Note. * $p < .05$.

Results of indirect effects were also examined to evaluate the comprehensive impact of one variable on another within the model. The matrices of standardized indirect effects among dependent latent variables (etas) are reported in Table 9. The matrices of standardized indirect effects among independent latent variables (ksis) and dependent latent variables are presented in Table 10.

Communication displayed significant indirect effects on backup, feedback, coordination, and team performance. Backup was found to have a significant indirect effect on team performance. Monitoring displayed significant indirect effects on coordination, and team performance. Feedback showed a negative indirect effect on team performance. One of the independent latent variables, guanxi, had indirect effects on coordination and team performance. Task interdependence showed an indirect effect only on backup. Team leadership showed significant indirect effects on backup, monitoring, feedback, coordination, and team performance. Squared multiple correlations are generally high, ranging between .68 (monitoring) to .94 (feedback), which indicate the percentage of variance in the latent variables explained by the model.

To conduct exploratory analyses of additional paths in the model, the hypothesized model was compared to constrained and unconstrained alternatives. A constrained model is one in which one or more paths in the hypothesized model are not estimated from the model (Anderson and Gerbing, 1988). The effect of removing those paths is determined by estimating the χ^2 change between the hypothesized model and the alternative model. The removed paths are considered to be important if the change in χ^2 is significant. In contrast, an unconstrained model is one in which one or more paths are added to the hypothesized model. A non-significant χ^2 difference between the

unconstrained and hypothesized model indicates that the hypothesized model is a better fit because it is more parsimonious (Anderson and Gerbing, 1988). On the other hand, a significant χ^2 difference implies that the alternative model better fits the data.

Then, three paths were added according to the modification indices: task interdependence → backup, team leadership → monitoring, and guanxi → team performance. This alternative model also yielded a better fit, $\chi^2(325, N = 312) = 604.48$, $p < .01$, GFI = .89, CFI = .97, NNFI = .97, and RMSEA = .05. The χ^2 to df ratio equals 1.86, which is smaller than 2.00. The chi-square difference between this alternative and the hypothesized model, $\Delta\chi^2(3) = 74.48$, is statistically significant ($p < .01$), which demonstrates that the alternative model is a better model.

Considering these comparisons, a revised model, which combined all the changes of the above two alternatives, was tested. The revised structural model is drawn in Figure 5. The revised model provided a better fit to the data than the hypothesized model, $\chi^2(327, N = 312) = 549.34, p < .01$, GFI = .91, CFI = .98, NNFI = .97, and RMSEA = .05. The ratio of χ^2 to degrees of freedom of 1.68 indicates a good fit. The chi-square difference between the revised model and the hypothesized model equals 129.62 (Δdf = 1), which indicates significant improvement of the model to the data.

The parameter estimates with completely standardized solutions and the squared multiple correlations of the revised model are also reported in Figure 5. Small t-values indicate that two of these relationships are not significant: communication → feedback and communication → monitoring. The t-value associated with all the other path coefficients exceeded the critical value of 2.00 required for the .05 significance level.

Significant beta (β) and gamma (γ) values range from .14 (task interdependence → backup) to 1.85 (backup → team coordination). High squared multiple correlations were achieved in the revised model, ranging between .78 (coordination) to .92 (feedback).

Table 12 reports the matrices of standardized indirect effects among dependent latent variables (etas). The matrices of standardized indirect effects among independent latent variables (ksis) and dependent latent variables are included in Table 13.

Among the latent independent variables, significant indirect effects were found on: communication → team orientation, communication → coordination, communication → team performance, backup → team orientation, backup → team performance, feedback → team orientation (negative), feedback → team performance (negative), and coordination → team orientation. As for the latent independent variables, guanxi displayed significant indirect effects on backup, coordination, and team performance. Task interdependence was found to have significant indirect effects on coordination and team performance. Team leadership displayed significant indirect effects on team orientation, backup, feedback, coordination, and team performance.

Summary of Results

Reliability and validity was established for the measures of the teamwork variables in the hypothesized model. Satisfactory reliabilities were obtained for all the subscales (> .72) and for the latent variables (> .75). Evidence of construct validity of the teamwork measures was provided by the high factor loadings, small Theta Delta values, high squared multiple correlations, high goodness-of-fit values, and high reliabilities for the subscales.

Table 11

Comparison of Hypothesized Model with Alternative Models

Model	χ^2	*df*	$\Delta\chi^2$	Δdf	GFI	CFI	NNFI	RMSEA
Hypothesized Model	678.96*	328			.87	.97	.96	.06
Alternative Model 1: constrained model	633.64*	330	45.32*	2	.88	.97	.96	.06
Alternative Model 2: unconstrained model	604.48*	325	74.48*	3	.89	.97	.97	.05
Revised Model: combined constrained and unconstrained models	549.34*	327	129.62*	1	.91	.98	.97	.05

Note. $N = 312$. GFI = goodness of fit index; CFI = comparative fit index; NNFI = non-normed fit index; RMSEA = root mean square error of approximation. * $p < .01$.

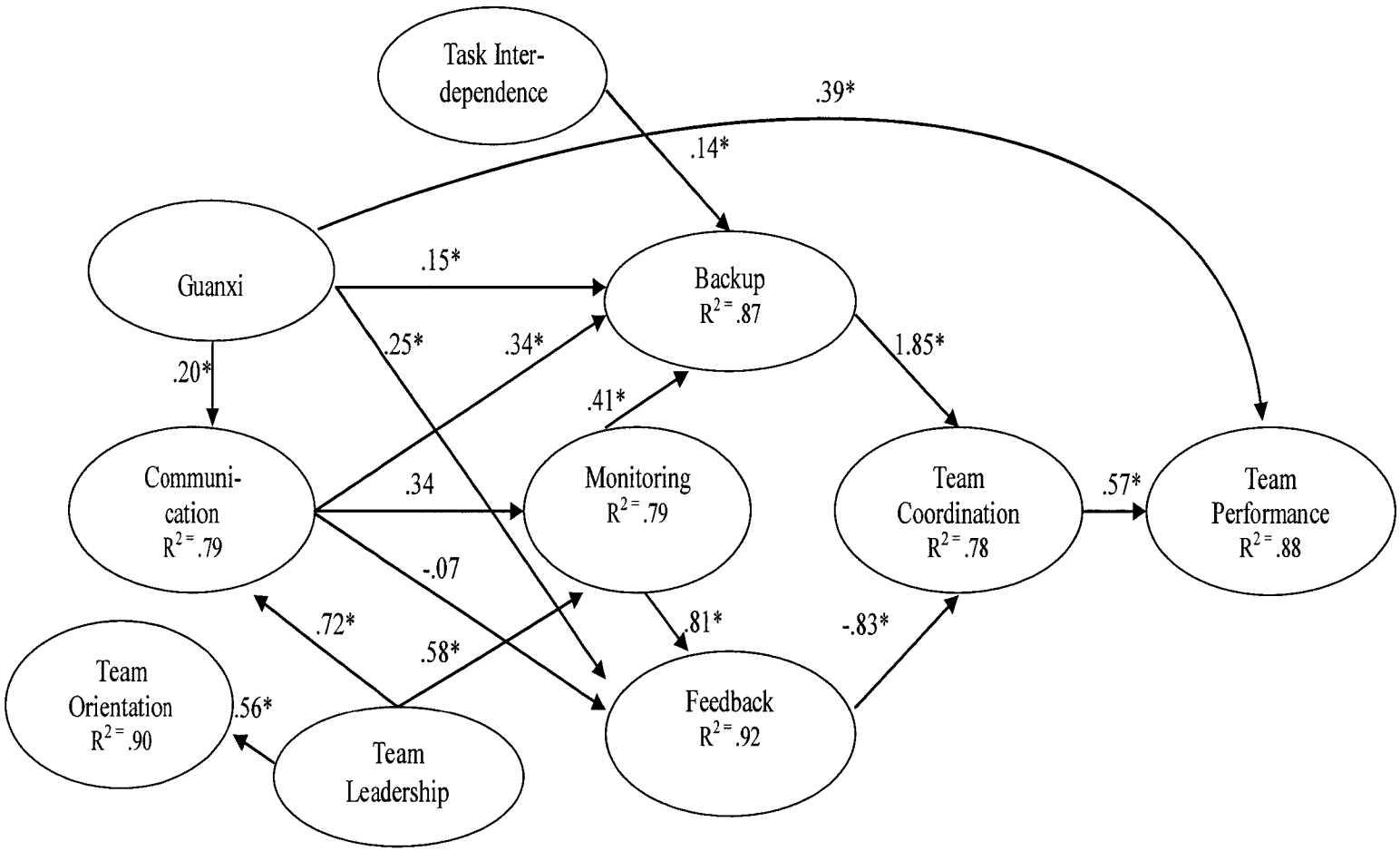

Figure 5. Path diagram displaying standardized coefficients for the revised model ($N = 312$, $*p < .05$).

Table 12

Standardized Indirect Effects among the Dependent Latent Variables in the Revised Model

	Team orientation	Communication	Backup	Monitoring	Feedback	Team coordination	Team performance
Team orientation	- -	.19*	.48*	.02	-.22*	.26*	- -
Communication	- -	- -	- -	- -	- -	- -	- -
Backup	- -	.14	- -	- -	- -	- -	- -
Monitoring	- -	- -	- -	- -	- -	- -	- -
Feedback	- -	.28	- -	- -	- -	- -	- -
Team coordination	- -	.71*	- -	.08	- -	- -	- -
Team performance	- -	.41*	1.06*	.05	-.48*	- -	- -

Note. * $p < .05$.

Table 13

Standardized Indirect Effects among the Independent and Dependent Latent Variables in the Revised Model

	Guanxi	Task interdependence	Team leadership
Team orientation	.23	.07	.15*
Communication	- -	- -	- -
Backup	.09*	- -	.58*
Monitoring	.07	- -	.25
Feedback	.04	- -	.61*
Team coordination	.20*	.26*	.56*
Team performance	.12*	.15*	.32*

Note. * $p < .05$.

According to the Phi matrices in the measurement models, indicators of different constructs are not highly correlated with each other ($r < .85$), the highest correlation coefficient between indicators of different construct is .72 (backup2 and feedback 1). The significant correlations among the latent variables indicate that they share a considerable degree of variation (ranging from .49 to .85), but remain conceptually distinct. The fact that latent variables substantially correlate with each other usually gives SEM more power to detect an incorrect model.

The test of hypotheses is based on the paths in the structural model. Guanxi was positively and significantly associated with backup ($\gamma = .21, p < .05$) and feedback ($\gamma = .21, p < .05$), but was not significantly associated with communication in the hypothesized model. Thus, partial support was achieved for hypotheses regarding guanxi as an antecedent variable. Task interdependence was hypothesized to have a positive impact on communication. However, the path between task interdependence and communication was positive but not significant ($\gamma = .09, p > .05$). This hypothesis of task interdependence as an antecedent variable was not confirmed. Supporting the hypotheses, team leadership showed significant positive impacts on both team orientation ($\gamma = .95, p < .05$) and communication ($\gamma = .69, p < .05$).

Team orientation was expected to have a positive impact on communication. However, the path from team orientation to communication was not significant ($\beta = .11, p > .05$). Therefore, no evidence was found to support this hypothesis. Communication was hypothesized to have positive impacts on backup, monitoring and feedback. Significant paths from communication to backup ($\beta = .33, p < .05$) and from

communication to monitoring ($\beta = .99, p < .05$) partially confirmed the hypothesis. The path from communication to feedback ($\beta = .13, p > .05$) was not significant, contrary to the hypothesis. As hypothesized, monitoring was positively and significantly associated with backup ($\beta = .46, p < .05$) and feedback ($\beta = .64, p < .05$). Furthermore, the results confirmed the hypotheses that backup behaviors are positively and significantly associated with team coordination. This path coefficient was the highest among all the coefficients in this model ($\beta = 2.35, p < .05$). This hypothesis was strongly supported. The original hypothesis stated that feedback has a positive impact on coordination. Surprisingly the path between feedback and coordination was significant but negative ($\beta = -1.32, p < .05$). Team coordination, as expected, was found to have a significantly and positively impact on team performance ($\beta = .93, p < .05$).

In an effort to further investigate the relationships among the variables in the hypothesized model, alternative models were examined based on the path coefficients, modification indices, and fit measures. The original hypothesized model was compared to these alternative models, and a revised model was identified with a much better fit. Two paths were removed, while three other paths were added to the hypothesized model. As shown in Figure 5, team orientation did not affect the communication among team members. Task interdependence may be an unnecessary condition for communication, but task interdependence did have a direct impact on backup behaviors ($\gamma = .14, p < .05$). Guanxi affected team performance ($\gamma = .39, p < .05$) beyond its indirect effect through communication, backup, and feedback, while team leadership had a direct impact on monitoring ($\gamma = .58, p < .05$). Identical results were found for all other paths among these

variables, except for the path from guanxi to communication and the path from communication to monitoring. In the hypothesized model, guanxi did not show the expected significant impact on communication, but guanxi was found to be positively and significantly associated with communication in the revised model ($\gamma = .20, p < .05$). Additionally, the path from communication to monitoring was statistically significant in the hypothesized model, but not statistically significant in the revised model ($\beta = .34, p > .05$). The path coefficient dropped from .99 in the hypothesized model to .34 in the revised model.

DISCUSSION

The purposes of this study were to explore the definition of teamwork that Chinese people use to describe their teams and to test a new model of teamwork in Chinese organizations. To test the underlying bases of teamwork among Chinese people, semi-structured interview procedures were conducted in China. Based on the literature as well as the results of the interviews, a definition of teamwork relevant in Chinese settings was identified. Team was defined as a distinguishable set of two or more people who interact, dynamically, interdependently, and *cooperatively* toward a common and valued goal/objective/mission, who have each been reasonably assigned specific roles or functions to perform, and who have a limited life span of membership. This definition did not differ greatly from the team concept in Western literature.

Research Findings

A teamwork model that could be applied in Chinese settings was developed based on extensive review of literature. The hypothesized structural model represented an integrated collection of team components, task interdependence, and guanxi. Overall, the results provided strong evidence for the hypothesized model. Most causal relationships (11 out of the 15) in the proposed model were significant, with moderate to high Beta and Gamma values. Four paths were not statistically significant. To further explore the relationships among these teamwork process variables, the hypothesized model was compared to a set of alternative models. A revised model with a much better fit was identified based on path coefficients, modification indices, and fit measures. The revised

model shared 13 paths with the hypothesized model, although 2 of the hypothesized paths were eliminated and 3 paths were added.

Impacts of guanxi. One of the most important findings is that guaxi, a variable unique to Chinese teams, plays an important role in teamwork process in Chinese settings. As Chen and Barshes (2000) concluded in their study, Chinese team workers need to feel comfortable with their teammates before they are willing to work in a team; Chinese employees prefer to work with people who get along well with them in a team. This may explain the direct effect of guanxi on team performance in the revised model. Compared to Westerns, the overlap between work and social relations is much more pervasive in China (Yg & Huo, 1993). It will be hard for Chinese employees to work in a team in the absence of strong interpersonal relationship with co-workers. The direct impact of guanxi on team performance has not been tested in previous research. There is a need for further research on direct impacts of guanxi on team performance as well as other teamwork components and outcomes.

In addition, the results of this study provided evidence that strong guanxi can make teamwork much easier because of its significant effects on giving feedback and providing backup behaviors. That is, the stronger the guanxi among team members, the more likely they provide backup behaviors and seek and provide feedback to each other. These findings agree with previous research (Kiong & Kee, 1998; McAllister, 1995). Kiong and Kee (1998) indicated that strong guanxi fosters the development of reliable interpersonal and business trust, which serves as the foundation for interpersonal cooperation (McAllister, 1995). According to the pilot interviews, providing backup behaviors is a common way for Chinese team members to display cooperation. Based on

these findings, we can conclude that strong guanxi is a necessary condition for seeking and providing feedback and backup in Chinese teams.

The path between communication and guanxi was not consistent across the two models (the hypothesized model and the revised model). Guanxi's significant effects on communication was only found in the revised model. This result provided evidence for the findings of previous studies (Far, Tsui, Xin, & Cheng, 1998; Tsui & Farh, 1997), who concluded that guanxi influences frequency of communication. It is also consistent with my personal working experience that the stronger the guanxi among team members, the more frequent and clear is the communication.

Importance of communication. The results of the current study confirmed the major role of communication in teamwork process, as stated in previous research (Dyer, 1984; McIntyre, Salas, Morgan, & Glickman, 1989; Morgan et al., 1986; Nieva et al., 1978). Communication among team members can serve a number of different purposes, including information exchange and support of other teamwork processes. For example, Dickinson and McIntyre (1997) argued that communication links the other components of teamwork. Chen and Barshes (2000) found it is easier to implement teamwork in Chinese organizations if open communication within teams is encouraged.

One of the consistent findings across different models is the strong relationship between team leadership and communication. This finding indicates that team leadership covaries with communication among team members. The finding agrees with those communication scholars who believe that leadership plays an active and directive role in affecting communication, and communication is the means by which leadership is shown (Staniforth & West, 1995; Weick, 1978). Especially in a high power distance society, like

China, leadership is the most effective way to increase frequency of communication and to help team members to communicate with each other more efficiently and clearly (Chen et al., 2000). Chen and Barshes (2000) stated that lack of communication leads to mistrust and indecision in Chinese workplaces; leaders ought to get team members to share information openly and effectively within teams.

The expected relationship was found between communication and backup behaviors. This finding is consistent with Rosenstein (1994), who concluded that effective communication makes it easier for team members to ask for help when it is needed, and to provide appropriate backup behaviors to each other. In collectivist societies, like China, providing backup to people in the same team is very natural and common (Triandis, 1995). Effective communication supports the process of requesting help, information exchange, and providing backup assistance. On the other hand, lack of clear communication can obstruct requesting and providing effective backup behaviors.

However, it is worth noting that all of the nonsignificant paths in the two models involve communication. This pattern indicates that the process of communication in teamwork is complicated, especially when it is tested in another country. Chinese characteristics and culture need to be taken account in examining communication in teamwork process, since culture is the foundation of communication (Deresky, 2000). Many cross-cultural researchers have studied communication in China (e.g., Bond & Hwang, 1986; Clyne, 1994; Gudykunst & Matsumoto, 1996; Gudykunst, Matsumoto, Ting-toomey, Nishida, Kim, and Heyman, 1996). These scholars have found that Chinese employ self-censoring. Chinese people may even compromise communication for the sake of maintaining social harmony, respecting the existing status hierarchy, and so forth

(Scollon & Scollon, 1995; Triandis, 1994). Some researchers also indicate that Chinese tend to prefer a more indirect, high-context style of communication to avoid direct confrontation (Bond, 1991; Bond & Hwang, 1986). Instead of focusing on expressing themselves directly and straightforwardly, Chinese prefer indirect and consensual conversation (Yang & Bond, 1990). Therefore, Chinese team members may not express themselves freely and directly, which adds complexity and ambiguity to the messages they deliver.

The measure used for communication was developed by American scholars and may not fully capture the Chinese notion of communication. Some of the items could be altered by Chinese communication style. For example, "clarify intentions to other team members" may be unclear to Chinese team members or difficult for them to do. An empirical study by Fletcher and Major (2006) used the same measure of communication with their team samples from the US. The mean score for communication from their study (mean = 4.26, SD = .63) is higher than the mean score from the current study (mean = 3.56, SD = .50). The above reason may explain why some of the paths around communication are not significant. Unless the impact is very strong, it is hard to achieve significant paths between communication and other variables. Further research should be conducted to modify and add more items to the communication measure as well as to ensure appropriateness for use in China.

The current study failed to support the hypothesis that team orientation positively affects communication. This result contradicts results reported by Rosenstein (1994), who found that team orientation is significantly associated with communication. Furthermore, this finding is inconsistent with Isabella and Waddock (1994), who found that team

orientation affects patterns of communication. Cohesiveness is an important facet of team orientation (Nieva et al., 1978). Highly cohesive teams usually communicate more frequently, although they tend to withdraw from argument situations (Gross and Martin, 1952). These contradictory results of team cohesiveness may provide an explanation for this unexpected result. Another possibility for the findings is sampling. A lot of teams in our sample are informal teams. Chinese team members, who are high in power distance and uncertainty avoidance (Bond, 1988; Goodman, 1995), may tend to defer to authority, show less informality, and prefer clearly written rules. The informal teams are not officially assigned, which makes it harder for Chinese team members to feel the sense of team membership and be aware of the unwritten rules. Additionally, the complexity of communication among Chinese may have limited the chance of finding significant direct or indirect effects from team orientation to communication or to any other variables in the model.

It was logical to expect that the stronger the interdependence of tasks, the more communication is needed. Researchers believe task interdependence has an important impact on communication (Hackman & Morris, 1975; Naylor & Dickinson, 1969; Nieva et al., 1978; Rico & Cohen, 2005). When team tasks are highly interdependent, task members have to communicate frequently and effectively with each other (Dickinson, 1969; Naylor & Dickinson, 1969). However, the proposed relationship between task interdependence and communication was not significant. One reason for this result could be that the task interdependence measure has eight items with three reverse-scored items. After removal of the poor items, task interdependence only has enough items for two indicators, which may affect the relationship between this construct and other constructs

(Gerbing & Anderson, 1985). Rosenstein (1994) also failed to find evidence of a path between task structure and communication. Rosenstein (1994) argued that communication might be affected more by interpersonal factors than by external factors. Of course, the effect of Chinese culture on communication may also be responsible for this nonsignificant path.

As hypothesized, the path from communication to monitoring was statistically significant in the hypothesized model. This result agrees with previous research that has found a significant relationship between communication and monitoring (McIntyre et al., 1989; Rosenstein, 1994). However, this relationship was not statistically significant in the revised model. It is possible that the significance of the path from communication to monitoring actually came from the strong impact that leadership had on monitoring in the hypothesized model. Thus the relationship was no longer significant after the direct effect from team leadership to monitoring was estimated in the revised model. One possible explanation for the nonsignificant relationship is that effective leadership, rather than ineffective communication, makes team members more willing to monitor performance of their teammates. Again, the complexity of communication in Chinese teams could explain the inconsistent results.

Results of this study failed to support the hypothesis that communication has a positive impact on seeking and providing feedback to other team members, although there was a significant indirect relationship between these two variables. This result is inconsistent with previous research (McIntyre et al., 1989; Rosenstein, 1994). The combination of cultural effects on communication and feedback may explain this nonsignificant path. McIntyre and Salas (1995) emphasized the importance of the

existence of free-flowing feedback in effective teams. Effective communication is a necessary condition for accurate feedback among team members. However, status, rank, or tenure can obstruct the free flow of necessary feedback (Driskell & Salas, 1992). It would be easier for Chinese team members to accept feedback if it comes from the team leader, and most difficult to give feedback to the team leader, especially for Chinese people high in power distance, which makes the free-flow of feedback among people from different age groups even harder. For Chinese people, providing and seeking feedback, especially negative feedback, is very difficult. Harmony is a core value in China, and maintaining harmony is an important criterion to evaluate a person's ability to communicate with others (Gudykunst &Ting-Toomey, 1988). Providing negative feedback would usually hurt group harmony in a Chinese workplace. Therefore, giving and seeking feedback behaviors are very sensitive among Chinese team members and need to be conducted very carefully.

Impacts of team leadership. The current study provides evidence that team leadership is a critical component of teamwork in Chinese teams. As hypothesized, team leadership was found to be positively associated with team orientation. This finding is consistent with previous research (Dickinson et al., 1992). By definition, team orientation includes the nature of the attitudes that team members have towards one another, team task, team norms, and their leadership (Dickinson et al., 1992; Larson & LaFasto, 1989; Morgan et al., 1986; Nieva et al., 1978). Beck (1981) argued that leaders influence development of group norms. Effective leadership can develop cohesiveness and foster positive perception of team norms, team leadership, and team membership among team members.

Additionally the revised model suggested that team leadership affects monitoring directly. This result agrees with the finding of Dickinson et al. (1992). Effective leadership behaviors can set a good example for team members to show how to track their fellow members' work and to encourage a climate of monitoring task performance among team members. On the other hand, in teams with management-by-exception and laissez-faire leadership behaviors, team members may not spend considerable time monitoring others' performance or may avoid addressing problems that other team members have on team tasks (Sivasubramaniam, Murry, Avolio, & Jung, 2002). In this situation, the team becomes passive and ineffective. In addition to these direct effects, team leadership displayed pervasive indirect effects on backup, monitoring, feedback, coordination, and team performance.

Relationships among other team process variables. Findings in the revised model indicate that task interdependence increases the frequency of seeking and providing backup behaviors. This result agrees with Chen and Barshes (2000), who found that task interdependence leads to willingness to cooperate and provide assistance to each other in Chinese teams. It is logical to conclude that people are willing to provide backup behaviors to their teammates whose tasks are highly interdependent with their own tasks, so that they could complete their tasks efficiently and effectively. This relationship was not proposed in the hypothesized model and it has not been addressed in previous research.

As hypothesized, monitoring was positively and significantly associated with backup and feedback. These results are consistent with those of Dickinson et al. (1992). Feedback and backup are the follow-up activities to monitoring (McIntyre & Salas,

1995). Only when team members have a substantial understanding of the tasks of other team members, they can be aware of effective or ineffective task performance of their teammates. Then can they pass the information on task performance to their teammates by giving feedback and providing backup behaviors if necessary.

The strongest positive relationship found in this study is the path from backup to team coordination. The relationship is strongly supported by previous research (e.g. Nieva et al., 1978; Dickinson, et al., 1992; Rosenstein, 1994). In Chinese teams, necessary backup behaviors are provided to ensure further coordinated performance and also increase within-group harmony. As Kim, Triandis, Kagitcibasi, Choi, and Yoon (1994) indicated, collectivists emphasize harmonious relationships, sometimes at the expense of their own task completion. It is natural and common for Chinese team members to provide backup behaviors to other members in the same team.

A very strong yet negative path was found between feedback and team coordination in both the hypothesized model and the revised model. Interestingly, Rosenstein (1994) also found a negative path between these two variables, but the negative path in her study was not significant. This surprising result indicates that feedback is a complicated variable in team process. Some researchers believe that the effects of feedback on team processes and performance are very complicated and not well understood (Hinsz, Tindale, & Vollrath, 1997; Nadler, 1979). Shaw (1976) argued that positive feedback, rather than negative feedback, leads to more positive effects on team process as well as team performance. In addition, as discussed earlier, power distance and harmony make seeking and giving feedback more difficult in Chinese settings. This result suggests that feedback is a very important variable in team process in Chinese settings,

but could pose a serious problem to the smooth functioning of the team if not given appropriately. Training in appropriate communication during the process of giving and seeking feedback can probably minimize negative effects.

Finally, the path between team coordination and team performance was positive and significant. The strong path indicates that team coordination plays a significant role in facilitating team performance. This result confirms findings reported by Driskell and Salas (1992) and Rosenstein (1994). Team coordination reflects operation of components of teamwork in which team members emerge to produce performance (Dickinson & McIntyre, 1997; McIntyre & Dickinson, 1992). Successful coordination synchronizes team process variables and leads to effective team performance.

The team performance measures. In the current study, three different rating sources were used to test team performance to avoid common method bias. It is a common practice to use multi-source feedback in examining performance (Facteau & Craig, 2001). Many researchers have proved that ratings from different sources can be calibrated because the same underlying performance constructs were being measured in each rater group (e.g., Facteau & Craig, 2001; Lance & Bennett, 1997; London & Smither, 1995; Maurer, Raju, & Collins, 1998). In this study, correlations among different rating sources were calculated for the combined team performance measure. Desired significant correlations were achieved for all three measures.

Contributions of this research

This research provides several contributions to theory, methodology, and practice. First and foremost, the current research extends and validates a theoretical model and measure of teamwork developed in United States to China. Critical theoretical insight

was gained regarding the underlying definition of teamwork that people use to describe their teams in Chinese organizations and the significant role of a set of teamwork process variables, task interdependence, and guanxi in team performance. Specifically, teamwork process variables including team orientation, team leadership, communication, backup, monitoring, feedback, and coordination were shown to have an impact on team performance. In addition, task interdependence and guanxi were found to have relationships with those team components in the process of teamwork.

Another important theoretical contribution of this research is that it provides the first empirical examination of the influence of guanxi on teamwork process and the success of team performance, which contributes to the cross-cultural study of teamwork. Previous researchers have suggested that guanxi enhances effectiveness of working relationships and provided some evidence for these arguments (e.g., Kiong & Kee, 1998; Law et al., 2000; Wong et al., 2003). However, no empirical study has examined the role of guanxi in team process. In sum, this study provides an empirical foundation for Chinese scholars to begin developing a theory of teamwork in Chinese settings. Since the relationships among the identified variables in this study have not been empirically examined before, the study advances the ongoing effort to explore teamwork.

The current study contributes to methodology in teamwork research by providing further psychometric evidence to measures of team components, task interdependence, and guanxi. Strong reliability and validity were established in this study using a Chinese sample. The items used in this study could provide the foundation for more comprehensive measures that are unique to teamwork research. Additionally, the study demonstrates the relevance of using team as unit of analysis in doing research on

teamwork and team performance and measurement. Many researchers have used the same data analysis strategy used in this study, that is, using aggregation of individual scores to reflect team level constructs and analyzing data at the team level (e.g., Barrick et al., 1998; Dickinson et al., 1992; Klein, Conn, Smith & Sorra, 2001; Rosenstein, 1994). Another methodological contribution of this study is use of several procedures to reduce potential problems associated with cross-cultural and team level research. First, pilot interviews before the research began were used to estimate the ability of Chinese employees to understand the team constructs intended for study and to uncover indigenous Chinese constructs relevant to teamwork; guanxi and cooperation were found to be important and were included in the teamwork model. Second, screening tests were used to ensure that sampled groups met the criteria to be considered a team. Finally, scale construction and data analysis reflected the latest research regarding aggregation.

With the increasing push to improve team learning, training, and performance in Chinese organizations, the current study can prove useful for enhancing understanding of these processes. The most important practical contribution is that it provides guidance to help Chinese organizations better understand the underlying meaning of teamwork and find critical teamwork process variables important in the design of training and organization development interventions intended to enhance team performance. The overall importance of each teamwork behavior and the relationships among them are all presented in this research. Moreover, the study provides a measure that can be used to assess teamwork and identify training and organization development needs. This research can help organizations to diagnose and avoid common performance-related problems in team training. For example, Chinese teams should be trained in leadership,

communications skills for providing feedback (especially negative feedback), and proper use of guanxi and relationships to enhance teamwork performance.

One other contribution is that the teamwork model provides a basis for performance assessment by providing specific guidelines and direction. Furthermore, based on these specific behavioral processes, certain patterns and characteristics could be identified for teams over time. Effective leadership strategies could be developed to reflect the uniqueness of different teams. In addition, the findings may assist managers in making targeted selection decisions. Based on the critical behaviors identified in this research, potential personality traits and other individual characteristics can be linked to them.

Limitations and Future Research

There are a number of potential limitations in this study that may influence interpretation of our findings and may offer several opportunities for future research.

First, the generalizability of the results is limited by the sample restrictions of the study. Although the samples were randomly selected, there were some problems that may have influenced results. For example, several cross-functional teams were used in this study, which may affect operation of some variables like team orientation. Thus, additional empirical studies should be conducted in order to further validate the structural model.

The second limitation of this study is the sample size. After eleven teams were deleted from the study due to low interrater reliability, data were analyzed using 312 teams. The sample size is slightly smaller than the recommended level, which may have lowered the power of this study. However, this sample size still compares favorably to

other published research using team as the unit of analysis. For example, Johnson, Burlingame, Olsen, Davies, and Gleave (2005) tested a model with similar complexity using a sample of 661 individuals representing 109 teams. Mathieu, Gilson, and Ruddy (2006) examined an 8-variable structural model with 121 teams (452 individuals). In future research, a larger sample of teams should be used to increase power. In addition, the mean of team size was 4.12, which is relatively small. Researchers believe that team size is an important consideration in affecting team processes and performance (Morgan & Lassiter, 1992; Steiner, 1966). Shaw (1976) reported that increase in team size tends to increase the interaction among team members, which in turn increases communication workload and coordination demands. On the other hand, team size affects the justification of data aggregation (Klein et al., 2000). Especially eta-squared is highly dependent on team size (Bliese & Halverson, 1998). When team size is large, eta-squared values are equivalent to ICC; when team size is small, eta-squared values show inflation relative to ICC. In our study, eta-squared values are all around .50, which are bigger than the ICC values.

The third limitation concerns some of the measures. Future researchers may wish to test the model using other operationalizations. Based on the results of factor analysis, the measure of task interdependence had enough items only for two subscales. Gerbing and Anderson (1985) suggested being cautious in interpreting the estimates of structural parameters if a latent variable has only two indicators. It is possible that the relationship between task interdependence and other latent variables would be different if three indicators were defined. More items are needed to measure this construct in future research. Another problematic measure is communication, which has items that may be

affected by cultural values. A more comprehensive measure sensitive to Chinese culture is needed in future research. The new instrument should combine various measures to capture different facets of communication that take into account relevant Chinese cultural characteristics. For example, items reflecting indirect communication style should be incorporated along with consideration of the context for communication. In addition, frequency of intentionally withdrawn messages should also be added to any new measure created to assess communication in Chinese teams.

Guanxi has been examined and discussed many times by different researchers. For example, Farh, Tsui, Xin, and Cheng (1998) used certain ties, such as same origin, classmate, or relative to measure guanxi. Although this is the most popular guanxi measure in the literature, the process of building up relationships to improve guanxi was suggested (Wong et al., 2003). A more recent scale also focused on the "connection" side of the guanxi definition, and measured some aspects of guanxi including returning favors, knowing the right people, and maintaining a network of relationships (Ang & Leong , 2000). The above scales are not designed to use employee behaviors or activities to reflect the strength of guanxi. Thus they do not match the purpose of the current research, which aims to explore specific behaviors in team process. The adopted measure by Wong et al. (2003) is the first fully developed and empirically validated measure for organizational research, which examines specific behaviors engaged by fellow workers. At this point, we can say that this measure should be preferred in future organizational research. However, this measure was not designed for use in the study of teamwork and was previously tested only in samples from Hong Kong. Further examination is needed of the guanxi construct in the context of teamwork using samples from across China.

In addition to guanxi, other possible cultural variables, such as harmony and trust, should be examined. Considering the exploratory nature of this study, future research can be conducted to find other possible cultural variables affecting team performance in Chinese settings.

Another concern is that there may be potential problems regarding multicollinearity in the structural models. Particularly, the paths from feedback and backup to team coordination have weights greater than one and have high R^2. These high weights may reflect significant indirect effects of other variables, such as guanxi, task interdependence, team leadership, monitoring, and communication, on team coordination.

The final concern is shared with all structural equation modeling research. A good fit of an alternative model could only mean that the model fits well to the data. Cross-validation is always recommended. Equivalent models exist for almost all models. Tomarken and Waller (2003) concluded that there are two higher order constraints on model testing research. First, model modifications are based solely on omnibus tests of hypotheses and/or global indices of fit. And researchers could not confirm definitively that a given model is correct. For future research, some scholars recommend systematic examination of equivalent models. For example, Spirtes, Richardson, Meek, Scheines, and Glymour (1998) argued that all of the simplest alternative models compatible with the background knowledge and data should be presented. Kline (1998) suggests that SEM-based articles should include demonstration of superior fit of preferred models over selected, plausible equivalent models. Future research should test and cross validate equivalent teamwork models in Chinese settings.

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Appendix A

Phone Interview Protocol

1. Could you tell me about what you think of teams, how do you define teams?
2. How many members in the teams you work with? How are these members selected? How are responsibilities divided? How long have you/your teammates been in the team?
3. What is the function of the teams? Who is your customer?
4. Who is the team leader? What are the responsibilities of the leader?
5. How is performance measured, monitored and rewarded?
6. What kind of feedback do teams receive about performance? How do you know when you have done a good job?
7. Do you think the teams are effective? Why or why not?
8. What are the key factors that contribute to and inhibit the success/failure of the team? Please recall effective/ineffective teams you were in or know, and point out what components do you think are the key factors contribute to the success/failure of team working.
9. Is it common that team members observe each other's performance and provide help and feedback? Do you think it is helpful?
10. What factors do you think are important to team performance in general?
11. Do you have anything else you would like to add?

Appendix B

The Team Screening Instrument

Questions	Yes	No
1. Does your team include two or more people? 2. Do team members need to interact with each other to accomplish the team task? 3. Do all the team members share a common and valued goal or mission? 4. Does each team member have a specific role or function? 5. Is team membership temporary? Do team members have a limited term of membership? 6. Do team members have to cooperate with each other to accomplish their team goal or mission? 7. Do team members frequently exchange information or resources at work? 8. Do team members have to time or coordinate their activities so that they can work together? 9. Are team members constantly adjusting to the demands or requirements of their task or goal? 10. Do team members depend upon each other? (1) Do team members need to communicate with each other? (2) Do team members need to anticipate the actions of each other?		

Appendix C
Survey Questionnaire

A SURVEY OF TEAMWORK IN CHINESE ORGANIZATION

This survey is conducted by Ying Liu, a Ph. D student in Psychology at Old Dominion University. Your responses will be used to develop a teamwork model that is practical in Chinese organizations.

Please respond to all the questions in the survey, as incomplete questionnaires create a serious problem in generating a valid result from the study. After you finish the survey, please return the whole package in the enclosed envelope.

Thank you for your time.

Ying Liu (yliux005@odu.edu)
Ph.D Student of Industrial/Organizational Psychology
Department of Psychology
Old Dominion University
Norfolk, VA, USA

Study Title: Teamwork model in Chinese organizations
Investigator: Ying Liu
Date: 07-20-05

Dear Participants:

I am a Ph.D student at Old Dominion University of the US. You are invited to participate in a research study. The purpose of this study is to identify a teamwork model that is practical in Chinese organizations. The findings of this study would help Chinese employees to have a more clear idea of teamwork. The study would provide basis for teamwork training in Chinese organizations.

In this survey, you will be asked questions about teamwork and Guanxi. Your voluntary participation will require approximately 30 minutes to complete the enclosed questionnaire. Completion and return of the questionnaire will be seen as evidence of your willingness to participate in the study and your consent to have the information used for the purposes of the study. Please complete the enclosed questionnaire following the instructions provided. After completing the questionnaire please place them in the prepared envelope and return it to me.

Please do not sign the questionnaire. It is not coded in any way that would permit your responses to be identified with you. Data will be stored securely and will be available only to persons conducting the study. No reference will be made on oral or written reports which could link you to the study.

If you have any questions at any time about the study or the procedures, you may contact me by email Yliux005@odu.edu, or by phone: 13901006837.

Your participation in this study is voluntary; you may decline to participate by not returning a completed survey instrument.

Thank you for your assistance.

Sincerely,

Ying Liu

INFORMED CONSENT DOCUMENT

OLD DOMINION UNIVERSITY

PROJECT TITLE: Teamwork in Chinese organization

INTRODUCTION

The purposes of this form are to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. Questionnaires of project "Teamwork in Chinese organization" can be completed in your own office.

RESEARCHERS

Ying Liu, Ph.D student of Industrial/organizational psychology, College of Science, Department of Psychology.
(Academic advisor, Dr. Donald Davis, Department of Psychology, Old Dominion University)

DESCRIPTION OF RESEARCH STUDY

Several studies have been conducted looking into the subject of team performance and many teamwork models have been developed. None of them have emphasized the application of teamwork in Chinese organizations. The purposes of this study are to explore the underlying definition of teamwork that people hold to describe their teams in Chinese organizations; to identify variables that contribute to teamwork in Chinese organizations, and to develop a new framework and measure of teamwork for Chinese teams. The study will provide a basis for a new teamwork training for Chinese organizations.

If you decide to participate, then you will receive a package that includes six test instruments. The completed questionnaires will be collected by the researcher. If you say YES, then your participation will last for 30 to 60 minutes at your own office. Approximately 1000 of employees from different organizations, who work in teams, will be participating in this study.

EXCLUSIONARY CRITERIA

In order to participate in this study, you must be working in a "team" in a Chinese organization. Additionally, you must be born and raised in China.

RISKS AND BENEFITS

RISKS: If you decide to participate in this study, then you may face some discomforts of being guilty not to develop a good personal relationship with some of your teammates. Some of the questions may also remind you some difficulties and frustrations you experienced during the process of teamwork. And, as with any research, there is some possibility that you may be subject to risks that have not yet been identified.
You are not expected to experience any physical or psychological discomfort before, during or after participating in this study.

BENEFITS: The main benefit to you for participating in this study is to help you understand more about teamwork process as well as the importance of Guanxi on team performance. As a result, it makes easier for you to work in teams. Upon completing the study you will be told more about how the information gathered here might be useful to those who work in teams.

COSTS AND PAYMENTS

The researchers want your decision about participating in this study to be absolutely voluntary. Yet the researchers are unable to give you any payment for participating in this study.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, they will give it to you.

CONFIDENTIALITY

The researchers will take reasonable steps to keep private information, such as questionnaires and laboratory findings, confidential. Your name will not appear on any of the forms and your answers will only be seen by the investigators of this study. We will use the name of your team leader as well as the function of your team to match your ratings with your team leader's ratings. Your answers will be stored in a secure location; we encourage you answer the questions thoughtfully and honestly throughout the study. The results of this study may be used in reports, presentations, and publications; but the researcher will not identify you. Of course, your records may be subpoenaed by court order or inspected by government bodies with oversight authority.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled. The researchers reserve the right to withdraw your participation in this study, at any time, if they observe potential problems with your continued participation.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm or injury arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact Dr. David Swain the current IRB chair at 757-683-6028 at Old Dominion University, who will be glad to review the matter with you.

VOLUNTARY CONSENT

By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them:

Please contact Ying Liu via email at: yliux005@odu.edu, or call her at 86-10-69623465 (in China) or 01-386-274-1562 (In US)

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. David Swain, the current IRB chair, at 757-683-6028, or the Old Dominion University Office of Research, at 757-683-3460.

And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

Subject's Printed Name & Signature	**Date**

INVESTIGATOR'S STATEMENT

I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws, and promise compliance. I have answered the subject's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

Investigator's Printed Name & Signature	**Date**

Instruction Sheet

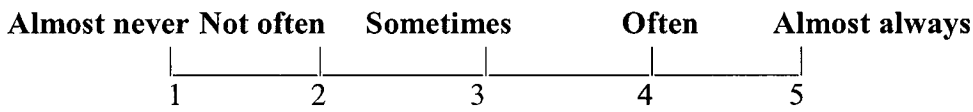
First of all, please read and understand the following definition of team:

Team is defined as a distinguishable set of two or more people who interact, dynamically, interdependently, and cooperatively toward a common and valued goal/objective/mission, who have each been reasonably assigned specific roles or functions to perform, and who have a limited life-span of membership.

Next, please think about your team (the team that we are currently collect data from) when you answer the following questions. Each section has different instructions, please read and follow the instructions carefully.

After you finish the questionnaire, please put it back into the envelope, and return it to me. DON'T write down your name or any identification number on any of the sheets in the whole package. The survey is for research purpose only. All the information relates to the survey will only be reviewed by the researcher.

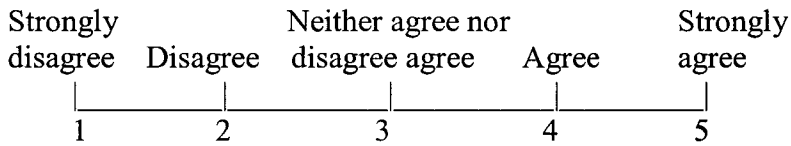
This questionnaire is divided into several sections. Each section describes an aspect of teamwork. Each aspect of teamwork uses a rating scale for it. There are no right or wrong answers; we are interested in your honest opinions. Use the number from the rating scale that best represents the aspect of teamwork in your team. For example,
How often do you eat lunch with a member of your team?



If you always eat lunch with your teammates, please place the number 5 to the left of the choice; If you often eat lunch with your teammates, please place the number 4 to the left of the choice If you sometimes eat lunch with your teammates, please place the number 3 to the left of the choice; If you do not eat lunch with your teammates often, please place the number 2 to the left of the choice If you never eat lunch with your teammates, please place the number 1 to the left of the choice. Use the numbers that are given here only, and do not mark in between the numbers or to use fractions, e.g. 3.5.SECTION 1: Team Performance

In this section of the survey, please evaluate the performance of your team as a whole.

Please select the response that best indicates the extent to which you agree with each statement.



1. _____ Team members always complete their duties specified in their job description.
2. _____ Team members fulfill all responsibilities required by their job.
3. _____ Team members often fail to perform essential duties. (R)
4. _____ Team members never neglect aspects of the job that they are obligated to perform
5. _____ Team members meet all the formal performance requirements of the job.

(Team Performance 1)

Please use the scale to rate how often your team achieves these outcomes.

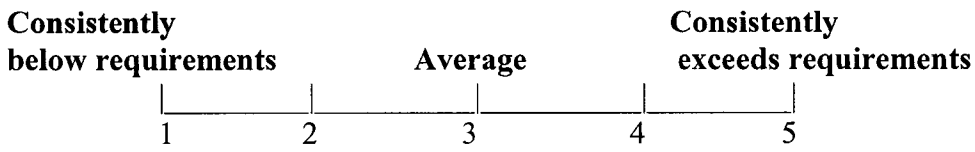
Almost never Not often Sometimes Often Almost always

1 2 3 4 5

6. _____ Accomplish team goals.
7. _____ Meet or exceed expectations of the team.
8. _____ Meet performance goals in a timely manner.
9. _____ Regard team output as adequate or acceptable.
10. _____ Achieve team goals with few or no errors.
11. _____ Produce team output that meets standards of the organization.
12. _____ Regard accomplishments of the team to be above average.
13. _____ Feel that the team as a whole performed at an acceptable level.
14. _____ Meet team objectives in an efficient manner.

(Team Performance 2)

Please select the following choice that most closely matches the overall rating about your team.



15. _____ Knowledge of tasks
16. _____ The quality of work
17. _____ Quantity of work
18. _____ Initiative behaviors
19. _____ Interpersonal skills
20. _____ Planning and allocation of material
21. _____ Overall performance of the team

(Team Performance 3)

SECTION 2: In this section of the survey, please select the response that best reflects how likely you are to do each of the following items.

Very Unlikely	**Unlikely**	**Neither likely nor unlikely**	**Likely**	**Very Likely**
1	2	3	4	5

1. _____ Play some sports with other team members.
2. _____ Exercise with other team members.
3. _____ Go over to their (other team members) apartments.
4. _____ Lend money to other team members.
5. _____ Lend money even though other team members may not be able to pay it back.
6. _____ Lend money to other team members' family.
7. _____ Skip a social event to run an errand with other team members.
8. _____ Miss a work meeting in order to visit your other team members.
9. _____ Give up your vacation to help your team members with a family illness.
10. _____ Exchange birthday or holiday gifts with other team members.
11. _____ Bring back gifts for other team members when you go away on holiday.
12. _____ Celebrate special events (birthday, holidays) with other team members.
13. _____ Listen to other team members' fears and worries.
14. _____ Discuss your personal thoughts and feelings with other team members.
15. _____ Comfort other team members if they have quarreled with a family member.

(Guanxi Scale Items)

SECTION 3: Teamwork Components Rating

The questions in this section are about teamwork behaviors, please rate how frequently your team members do the each of the behaviors. Please read the definitions of each teamwork behavior before making your rating.

Almost never Not often Sometimes Often Almost always

1 2 3 4 5

Team Orientation: Team Orientation refers to the attitudes that team members have toward one another and the team task. It reflects an acceptance of team norms, level of group cohesiveness, and importance of team membership.

How often do team members ___?

1. _____ Willingly participate in all relevant aspects of the team.
2. _____ Cooperate fully with one another.
3. _____ Pull together and place team goals ahead of their personal goals and interests.
4. _____ Display a high degree of pride in their duties and the team.
5. _____ Display a high degree of trust among one another.
6. _____ Display awareness that they are part of a team and that teamwork is important.
7. _____ Assign high priority to team goals.
8. _____ Display willingness to rely on other team members.
9. _____ Get along with other team members.
10. _____ Enjoy working with other team members.
11. _____ Feel that team experience is personally satisfying.
12. _____ Feel proud of personal contributions to team output.
13. _____ Regard other team members in a positive way.
14. _____ Feel close to other team members.
15. _____ Do helpful things for other members of the team.
16. _____ Unify with other members in pursuit of team goals.
17. _____ Feel that accomplishment of team goals is important.
18. _____ Agree with other members about importance of team goals.
19. _____ Are able to work with other members to achieve optimal performance.
20. _____ Find it easy to accomplish tasks in the company of other team members.

Almost never Not often Sometimes Often Almost always

1 2 3 4 5

Team Leadership: Team Leadership involves providing direction, structure, and support for other team members. It does not necessarily refer to a single individual with formal authority over others. Team leadership can be shown by several team members.

How often do team members ___?

21. _____ Encourage other members to make decisions on their own.
22. _____ Work with other members to develop communication methods and areas of responsibility.
23. _____ Explain to other team members exactly what is needed from them during an assignment.
24. _____ Review the situation quickly when the team becomes overwhelmed and take action.
25. _____ Ensure that other members are working up to capacity.
26. _____ Ask other members to follow standard procedures.
27. _____ Stress the importance of meeting deadlines.
28. _____ Strive to maintain definite performance standards.
29. _____ Give consideration to the needs of other members, especially subordinates.
30. _____ Provide encouragement when other members attempt to meet new challenges.
31. _____ Are willing to listen to problems/complaints of other members.
32. _____ Show concern for the welfare of other team members, especially subordinates.
33. _____ Strive to create a friendly team environment.
34. _____ Provide needed support for new members.
35. _____ Listen to the concerns of other team members.
36. _____ Assign experienced members to perform critical tasks.
37. _____ Assign extra work only to the more capable members.
38. _____ Find someone to fill in for them when leaving work.

Almost never Not often Sometimes Often Almost always

1 2 3 4 5

Communication: Communication involves the exchange of information between two or more team members in the prescribed manner and by using proper terminology. Often the purpose of communication is to clarify or acknowledge the receipt of information.

How often do team members ___?

39. _____ Clarify intentions to other team members.
40. _____ Clarify procedures in advance of assignments.
41. _____ Pass complete information as prescribed.
42. _____ Acknowledge and repeat messages to ensure understanding.
43. _____ Communicate with proper terminology and procedures.
44. _____ Verify information prior to making a report.
45. _____ Ask for clarification of performance status when necessary.
46. _____ Follow proper communication procedures in passing and receiving information.
47. _____ Ensure that members who receive information understand it as it was intended to be understood.
48. _____ Communicate information related to the task.
49. _____ Discuss task-related problems with others.

Almost never	Not often	Sometimes	Often	Almost always
1	2	3	4	5

Monitoring: Monitoring refers to observing the activities and performance of other team members. It implies that team members are individually competent and that they may subsequently provide feedback and backup behavior.

How often do team members ___?

50. _____ Are aware of other team members' performance.
51. _____ Are concerned with the performance of the team members with whom they interact closely.
52. _____ Make sure other team members are performing appropriately.
53. _____ Recognize when a team member makes a mistake.
54. _____ Recognize when a team member performs correctly.
55. _____ Notice the behavior of others.
56. _____ Discover errors in the performance of another team member.
57. _____ Watch other team members to ensure that they are performing according to guidelines.
58. _____ Notice which members are performing their tasks especially well.

Almost never	Not often	Sometimes	Often	Almost always
1	2	3	4	5

Feedback: Feedback involves the giving, seeking, and receiving of information among members. Giving feedback refers to providing information regarding other members' performance. Seeking feedback refers to requesting input or guidance regarding performance. Receiving feedback refers to accepting positive and negative information regarding performance.

How often do team members ___?

59. _____ Respond to other members' requests for performance information.
60. _____ Accept time-saving suggestions offered by other team members.
61. _____ Explain terminology to a member who does not understand its meaning.
62. _____ Ask the supervisor for input regarding their performance and what needs to be worked on.
63. _____ Are corrected on a few mistakes, and incorporate the suggestions into their procedures.
64. _____ Use information provided by other members to improve behavior.
65. _____ Ask for advice on proper procedures.
66. _____ Provide helpful suggestions to other members.
67. _____ Provide insightful comments when an assignment does not go as planned.

Almost never Not often Sometimes Often Almost always

1 2 3 4 5

Backup Behavior: Backup behavior involves assisting the performance of other team members. This implies that members have an understanding of other members' tasks. It also implies that members are willing and able to provide and seek assistance when needed.

How often do team members ___?

68. _____ Take the place of another member who is unable to perform a task.
69. _____ Seek opportunities to aid other team members.
70. _____ Help another member correct a mistake.
71. _____ Provide assistance to those who need it when specifically asked.
72. _____ Step in for another team member who is overburdened.
73. _____ Take control of situation when other team members do not know how to perform.
74. _____ Solve a problem posed by another team member.
75. _____ Ask for help when needed.
76. _____ Maintain their own duties in the process of helping others.

Almost never Not often Sometimes Often Almost always

1 2 3 4 5

Coordination: Coordination refers to team members executing their activities in a timely and integrated manner. It implies that the performance of some team members influences the performance of other team members. This may involve an exchange of information that subsequently influences another member's performance.

How often do team members ___?

77. _____ Complete individual tasks without error, in a timely manner.
78. _____ Pass performance-relevant data from one to another in an efficient manner.
79. _____ Are familiar with the relevant parts of other members' jobs.
80. _____ Facilitate the performance of each other.
81. _____ Carry out individual tasks in synchrony.
82. _____ Cause each other to work effectively.
83. _____ Avoid distractions during critical assignments.
84. _____ Carry out individual tasks effectively thereby leading to coordinated team performance.
85. _____ Work together with other members to accomplish team goals.

SECTION 4: Task Interdependence Scale Items

The questions in this section of the survey are about the interdependence of your task with that of your teammates. Please select the response that best indicates the extent to which you agree with each statement:

Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
1	2	3	4	5

1. _____ I work closely with others of the team in doing my work.
2. _____ I frequently must coordinate my efforts with others in the team.
3. _____ My own performance is dependent on receiving accurate information from other team members.
4. _____ The way I perform my job has a significant impact on other team members.
5. _____ My work requires me to consult with other team members fairly frequently.
6. _____ I work fairly independently of other team members in my work (R).
7. _____ I can plan my own work with little need to coordinate with other team members (R).
8. _____ I rarely have to obtain information from other team members to complete my work (R).

SECTION 5: Demographic Questionnaire

Now we would like to know a few things about you. We will use these information only to classify the results.

1. Are you Male or Female? Male __; Female __

2. What is your age? ____

3. How long have you worked as a member of your team? _____

   For how long has your team existed? _____

   For how long have you worked for this organization? _____

4. Please check the types of team you work for ((Please check only one).
   _____ Administration
   _____ Customer service
   _____ Development and research
   _____ Finance and statistics
   _____ Maintenance
   _____ Manufacturing
   _____ Management
   _____ Marketing
   _____ Security
   _____ Technology
   _____ Other (Please specify) _____

Thank you for your time.

Appendix D

R_{wg} for Teams

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi-cation	Monitoring	Feed Back	Back Up	Coordi-nation	Task Interdependence
1	0.74	0.65	0.77	0.69	0.74	0.68	0.77	0.87	0.76	0.71
2	0.70	0.81	0.83	0.71	0.85	0.81	0.78	0.80	0.85	0.92
3	0.80	0.81	0.73	0.75	0.74	0.72	0.72	0.65	0.82	0.73
4	0.76	0.71	0.73	0.75	0.64	0.59	0.74	0.74	0.56	0.75
5	0.75	0.76	0.71	0.72	0.76	0.73	0.73	0.49	0.50	0.70
6	0.84	0.87	0.86	0.86	0.75	0.64	0.47	0.83	0.83	0.88
7	0.75	0.77	0.71	0.71	0.73	0.69	0.81	0.68	0.81	0.81
8	0.83	0.80	0.81	0.76	0.72	0.80	0.84	0.71	0.85	0.83
9	0.72	0.80	0.83	0.82	0.85	0.73	0.69	0.78	0.83	0.81
10	0.71	0.56	0.71	0.58	0.70	0.79	0.74	0.75	0.75	0.84
11	0.83	0.81	0.79	0.84	0.82	0.63	0.79	0.79	0.81	0.82
12	0.78	0.82	0.78	0.80	0.82	0.72	0.84	0.81	0.85	0.79
13	0.75	0.83	0.74	0.72	0.75	0.67	0.42	0.75	0.89	0.84
14	0.73	0.70	0.71	0.75	0.64	0.72	0.70	0.54	0.53	0.75
15	0.80	0.76	0.76	0.64	0.75	0.63	0.71	0.79	0.72	0.84
16	0.80	0.74	0.72	0.75	0.79	0.57	0.69	0.71	0.77	0.78
17	0.83	0.85	0.74	0.75	0.80	0.72	0.47	0.78	0.86	0.88
18	0.76	0.75	0.77	0.66	0.75	0.79	0.72	0.76	0.74	0.66
19	0.74	0.71	0.74	0.74	0.63	0.49	0.58	0.79	0.74	0.77

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordi nation	Task Interdependence
20	0.78	0.60	0.71	0.73	0.80	0.63	0.60	0.73	0.76	0.83
21	0.72	0.55	0.77	0.71	0.58	0.74	0.69	0.71	0.80	0.79
22	0.71	0.70	0.69	0.79	0.73	0.78	0.89	0.81	0.75	0.56
23	0.74	0.72	0.51	0.60	0.71	0.71	0.61	0.77	0.81	0.77
24	0.70	0.78	0.62	0.58	0.56	0.74	0.76	0.75	0.81	0.73
25	0.77	0.78	0.58	0.78	0.53	0.82	0.63	0.78	0.80	0.72
26	0.82	0.75	0.74	0.72	0.84	0.53	0.72	0.83	0.86	0.81
27	0.82	0.67	0.73	0.79	0.73	0.83	0.78	0.47	0.72	0.56
28	0.76	0.72	0.73	0.74	0.77	0.66	0.74	0.79	0.74	0.80
29	0.76	0.72	0.71	0.71	0.74	0.74	0.61	0.64	0.61	0.73
30	0.81	0.71	0.60	0.71	0.71	0.58	0.73	0.73	0.76	0.71
31	0.70	0.74	0.62	0.61	0.58	0.75	0.76	0.73	0.72	0.74
32	0.75	0.73	0.72	0.70	0.61	0.73	0.42	0.78	0.52	0.74
33	0.54	0.57	0.52	0.45	0.43	0.59	0.56	0.55	0.57	0.68
34	0.73	0.70	0.70	0.73	0.63	0.57	0.73	0.79	0.63	0.73
35	0.63	0.51	0.42	0.58	0.50	0.55	0.59	0.56	0.47	0.53
36	0.72	0.77	0.74	0.74	0.72	0.57	0.71	0.76	0.71	0.48
37	0.75	0.92	0.79	0.79	0.86	0.92	0.86	0.83	0.83	0.88
38	0.75	0.72	0.72	0.66	0.61	0.72	0.79	0.49	0.81	0.73
39	0.74	0.52	0.57	0.72	0.76	0.56	0.71	0.75	0.71	0.73
40	0.74	0.72	0.71	0.73	0.75	0.61	0.59	0.59	0.71	0.74
41	0.73	0.59	0.70	0.70	0.72	0.58	0.61	0.71	0.72	0.73

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordin -ation	Task Interdependence
42	0.75	0.65	0.59	0.52	0.58	0.48	0.57	0.46	0.44	0.61
43	0.79	0.90	0.86	0.82	0.89	0.81	0.89	0.86	0.86	0.84
44	0.68	0.80	0.79	0.92	0.75	0.86	0.78	0.81	0.78	0.66
45	0.71	0.71	0.71	0.72	0.71	0.42	0.72	0.72	0.51	0.46
46	0.70	0.72	0.72	0.58	0.54	0.75	0.74	0.46	0.78	0.73
47	0.79	0.78	0.74	0.73	0.71	0.71	0.60	0.76	0.76	0.55
48	0.73	0.78	0.72	0.81	0.58	0.74	0.83	0.56	0.61	0.71
49	0.80	0.77	0.77	0.81	0.67	0.62	0.83	0.81	0.77	0.67
50	0.72	0.76	0.72	0.57	0.30	0.73	0.75	0.63	0.77	0.74
51	0.83	0.80	0.73	0.71	0.85	0.89	0.44	0.57	0.70	0.58
52	0.76	0.56	0.75	0.78	0.77	0.81	0.51	0.59	0.72	0.76
53	0.85	0.77	0.74	0.75	0.68	0.61	0.76	0.74	0.83	0.66
54	0.85	0.70	0.80	0.60	0.44	0.72	0.85	0.78	0.76	0.67
55	0.73	0.70	0.52	0.74	0.44	0.73	0.71	0.74	0.76	0.65
56	0.72	0.77	0.76	0.59	0.60	0.80	0.50	0.77	0.78	0.78
57	0.71	0.77	0.76	0.79	0.77	0.78	0.39	0.85	0.54	0.49
58	0.73	0.80	0.84	0.81	0.56	0.46	0.78	0.78	0.71	0.46
59	0.78	0.80	0.71	0.49	0.52	0.78	0.75	0.73	0.70	0.50
60	0.80	0.48	0.81	0.54	0.81	0.79	0.58	0.71	0.82	0.78
61	0.71	0.76	0.70	0.77	0.58	0.91	0.69	0.74	0.76	0.75
62	0.78	0.73	0.73	0.54	0.74	0.48	0.72	0.81	0.80	0.50
63	0.76	0.62	0.75	0.78	0.73	0.80	0.74	0.60	0.73	0.54

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordi -nation	Task Interdependence
64	0.74	0.84	0.76	0.65	0.58	0.80	0.72	0.72	0.56	0.76
65	0.80	0.58	0.77	0.78	0.51	0.76	0.76	0.49	0.78	0.83
66	0.72	0.70	0.78	0.77	0.75	0.77	0.75	0.79	0.79	0.75
67	0.75	0.79	0.70	0.71	0.82	0.57	0.73	0.59	0.61	0.73
68	0.72	0.73	0.72	0.80	0.64	0.61	0.76	0.76	0.89	0.75
69	0.76	0.74	0.51	0.71	0.75	0.46	0.74	0.71	0.76	0.55
70	0.75	0.89	0.81	0.89	0.80	0.91	0.52	0.44	0.50	0.90
71	0.72	0.77	0.75	0.63	0.80	0.73	0.73	0.64	0.59	0.75
72	0.80	0.80	0.69	0.74	0.77	0.76	0.72	0.67	0.72	0.63
73	0.85	0.81	0.74	0.76	0.76	0.79	0.76	0.75	0.65	0.44
74	0.85	0.88	0.83	0.81	0.88	0.87	0.85	0.76	0.83	0.83
75	0.81	0.81	0.79	0.76	0.75	0.79	0.81	0.80	0.66	0.81
76	0.78	0.73	0.74	0.62	0.74	0.75	0.71	0.57	0.72	0.64
77	0.83	0.74	0.78	0.80	0.83	0.75	0.84	0.70	0.77	0.84
78	0.80	0.71	0.80	0.56	0.66	0.75	0.84	0.66	0.81	0.70
79	0.80	0.77	0.75	0.68	0.73	0.72	0.74	0.80	0.74	0.79
80	0.80	0.81	0.71	0.71	0.79	0.23	0.63	0.82	0.77	0.78
81	0.75	0.75	0.76	0.73	0.74	0.59	0.67	0.74	0.71	0.74
82	0.78	0.73	0.79	0.75	0.75	0.74	0.78	0.70	0.76	0.81
83	0.68	0.64	0.55	0.37	0.56	0.39	0.60	0.44	0.52	0.51
84	0.79	0.62	0.80	0.78	0.62	0.62	0.76	0.75	0.73	0.80
85	0.77	0.66	0.73	0.73	0.81	0.77	0.53	0.67	0.73	0.77

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordi -nation	Task Interdependence
86	0.78	0.80	0.74	0.58	0.71	0.62	0.59	0.74	0.72	0.81
87	0.75	0.74	0.74	0.76	0.75	0.68	0.62	0.77	0.62	0.82
88	0.75	0.75	0.71	0.72	0.73	0.58	0.79	0.54	0.57	0.73
89	0.75	0.72	0.59	0.78	0.77	0.56	0.56	0.78	0.70	0.79
90	0.77	0.79	0.78	0.76	0.65	0.78	0.74	0.66	0.60	0.81
91	0.85	0.78	0.72	0.75	0.72	0.65	0.69	0.78	0.72	0.70
92	0.73	0.73	0.72	0.73	0.71	0.57	0.71	0.66	0.71	0.74
93	0.81	0.75	0.74	0.61	0.78	0.62	0.77	0.72	0.70	0.62
94	0.74	0.74	0.62	0.75	0.80	0.57	0.58	0.74	0.77	0.78
95	0.80	0.79	0.75	0.79	0.71	0.81	0.86	0.80	0.77	0.83
96	0.73	0.78	0.85	0.78	0.81	0.75	0.59	0.67	0.81	0.74
97	0.73	0.74	0.77	0.75	0.71	0.72	0.67	0.66	0.76	0.68
98	0.76	0.73	0.55	0.73	0.67	0.71	0.58	0.74	0.80	0.72
99	0.77	0.81	0.70	0.71	0.82	0.74	0.78	0.77	0.78	0.88
100	0.79	0.76	0.72	0.70	0.64	0.78	0.78	0.74	0.75	0.74
101	0.76	0.76	0.74	0.74	0.72	0.72	0.70	0.73	0.74	0.74
102	0.77	0.87	0.85	0.85	0.93	0.44	0.56	0.94	0.86	0.88
103	0.90	0.63	0.83	0.82	0.86	0.81	0.89	0.61	0.92	0.47
104	0.90	-0.03	0.79	0.71	0.50	0.86	-0.17	0.83	0.83	0.84
105	0.89	0.75	0.80	0.81	0.82	0.83	0.81	0.53	0.83	0.38
106	0.62	0.82	0.65	0.87	0.76	0.78	0.74	0.76	0.71	0.73
107	0.69	0.79	0.86	0.92	0.74	0.78	0.81	0.70	0.65	0.71

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordi -nation	Task Interdependence
108	0.79	0.26	0.71	0.88	0.33	0.70	0.76	0.80	0.78	0.25
109	0.75	0.64	0.79	0.44	0.85	0.89	0.74	0.85	0.77	0.83
110	0.73	0.57	0.73	0.77	0.73	0.80	0.52	0.63	0.78	0.79
111	0.90	0.94	0.87	0.95	0.95	0.87	0.91	0.94	0.98	0.88
112	0.87	0.82	0.87	0.82	0.83	0.83	0.89	0.87	0.83	0.73
113	0.93	0.89	0.90	0.95	0.87	0.94	1.00	0.96	0.90	0.87
114	0.70	0.18	0.74	0.47	0.78	0.75	0.75	0.81	0.77	0.36
115	0.78	0.59	0.85	0.71	0.77	0.89	0.65	0.74	0.88	0.71
116	0.88	0.80	0.91	0.88	0.92	0.89	0.89	0.89	0.93	0.83
117	0.89	0.92	0.80	0.87	0.92	0.85	0.91	0.89	0.93	0.83
118	0.72	0.83	0.36	0.35	0.36	0.93	0.87	0.72	0.72	0.75
119	0.86	0.70	0.75	0.88	0.60	0.79	0.74	0.84	0.78	0.57
120	0.90	0.85	0.85	0.83	0.77	0.86	0.83	0.78	0.78	0.81
121	0.71	0.83	0.63	0.74	0.66	0.72	0.81	0.74	0.76	0.66
122	0.84	0.77	0.79	0.82	0.86	0.77	0.81	0.69	0.85	0.72
123	0.75	0.64	0.64	0.69	0.82	0.78	0.76	0.83	0.70	0.73
124	0.76	0.78	0.80	0.78	0.81	0.79	0.59	0.76	0.71	0.83
125	0.77	0.71	0.70	0.66	0.75	0.71	0.70	0.74	0.73	0.59
126	0.75	0.78	0.77	0.77	0.77	0.79	0.78	0.80	0.73	0.84
127	0.83	0.91	0.89	0.89	0.80	0.72	0.83	0.78	0.87	0.81
128	0.82	0.80	0.85	0.85	0.77	0.89	0.91	0.89	0.86	0.84
129	0.86	0.81	0.87	0.85	0.87	0.87	0.87	0.86	0.84	0.79

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi-cation	Monitoring	Feed Back	Back Up	Coordi-nation	Task Interdependence
130	0.82	0.84	0.83	0.77	0.76	0.87	0.87	0.85	0.83	0.85
131	0.83	0.76	0.74	0.64	0.70	0.75	0.75	0.72	0.63	0.77
132	0.80	0.77	0.78	0.76	0.80	0.76	0.76	0.69	0.68	0.79
133	0.75	0.79	0.83	0.83	0.86	0.83	0.83	0.85	0.70	0.81
134	0.76	0.70	0.80	0.81	0.88	0.81	0.67	0.85	0.91	0.77
135	0.77	0.81	0.79	0.74	0.85	0.74	0.69	0.70	0.76	0.76
136	0.81	0.87	0.83	0.58	0.79	0.20	0.72	0.83	0.85	0.46
137	0.79	0.77	0.70	0.72	0.32	0.08	0.11	0.81	0.89	0.78
138	0.72	0.85	0.88	0.88	0.73	0.44	0.28	0.86	0.42	0.75
139	0.83	0.75	0.83	0.58	0.77	0.86	0.50	0.92	0.97	0.53
140	0.73	0.78	0.85	0.85	-0.01	0.89	0.44	0.86	0.75	0.28
141	0.41	0.58	0.81	0.74	0.91	0.89	0.89	0.86	0.72	0.53
142	0.83	0.86	0.84	0.73	0.83	0.52	0.79	0.76	0.77	0.65
143	0.75	0.83	0.79	0.82	0.62	0.50	0.52	0.85	0.91	0.81
144	0.80	0.87	0.80	0.85	0.80	0.67	0.67	0.72	0.70	0.81
145	0.84	0.83	0.82	0.78	0.84	0.87	0.75	0.86	0.84	0.78
146	0.79	0.83	0.85	0.81	0.67	0.81	0.71	0.74	0.81	0.69
147	0.66	0.84	0.81	0.82	0.89	0.85	0.89	0.83	0.80	0.71
148	0.84	0.84	0.74	0.73	0.78	0.81	0.64	0.8	0.81	0.65
149	0.81	0.79	0.73	0.79	0.75	0.76	0.61	0.69	0.81	0.79
150	0.80	0.77	0.72	0.69	0.74	0.73	0.61	0.69	0.73	0.84
151	0.83	0.85	0.84	0.78	0.77	0.86	0.85	0.85	0.81	0.84

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordi -nation	Task Interdependence
152	0.87	0.86	0.81	0.80	0.80	0.83	0.87	0.70	0.78	0.50
153	0.77	0.85	0.87	0.84	0.79	0.76	0.79	0.80	0.80	0.73
154	0.84	0.85	0.90	0.87	0.87	0.89	0.89	0.89	0.93	0.84
155	0.80	0.79	0.84	0.86	0.88	0.84	0.83	0.86	0.75	0.80
156	0.80	0.79	0.79	0.77	0.78	0.77	0.75	0.76	0.75	0.66
157	0.83	0.71	0.76	0.77	0.82	0.77	0.84	0.79	0.78	0.81
158	0.80	0.74	0.82	0.76	0.79	0.87	0.76	0.83	0.81	0.79
159	0.76	0.80	0.84	0.83	0.76	0.68	0.70	0.62	0.72	0.77
160	0.71	0.73	0.71	0.72	0.59	0.61	0.70	0.75	0.63	0.71
161	0.81	0.86	0.82	0.83	0.77	0.87	0.81	0.81	0.83	0.81
162	0.85	0.85	0.85	0.88	0.80	0.81	0.78	0.89	0.75	0.81
163	0.72	0.73	0.71	0.71	0.67	0.75	0.67	0.78	0.71	0.77
164	0.80	0.77	0.78	0.76	0.80	0.76	0.76	0.69	0.68	0.71
165	0.71	0.74	0.73	0.59	0.72	0.71	0.66	0.64	0.71	0.81
166	0.79	0.62	0.76	0.75	0.81	0.63	0.81	0.59	0.80	0.78
167	0.58	0.63	0.77	0.79	0.81	0.77	0.77	0.69	0.74	0.75
168	0.70	0.69	0.70	0.69	0.79	0.70	0.65	0.76	0.74	0.75
169	0.60	0.60	0.74	0.72	0.74	0.70	0.71	0.74	0.64	0.73
170	0.72	0.79	0.58	0.60	0.71	0.56	0.72	0.78	0.74	0.79
171	0.83	0.75	0.88	0.76	0.80	0.72	0.75	0.89	0.75	0.81
172	0.78	0.80	0.79	0.75	0.65	0.74	0.75	0.73	0.73	0.66
173	0.70	0.70	0.73	0.75	0.62	0.64	0.72	0.70	0.60	0.74

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordi -nation	Task Interdependence
174	0.76	0.84	0.56	0.79	0.53	0.83	0.54	0.85	0.80	0.75
175	0.75	0.81	0.78	0.70	0.69	0.66	0.77	0.71	0.72	0.73
176	0.74	0.84	0.55	0.80	0.45	0.83	0.81	0.76	0.48	0.73
177	0.70	0.73	0.57	0.61	0.76	0.71	0.77	0.73	0.60	0.71
178	0.73	0.61	0.70	0.70	0.76	0.64	0.76	0.64	0.72	0.81
179	0.74	0.63	0.73	0.71	0.68	0.72	0.81	0.76	0.43	0.73
180	0.73	0.79	0.69	0.69	0.60	0.75	0.73	0.78	0.70	0.76
181	0.80	0.76	0.75	0.70	0.64	0.74	0.75	0.68	0.74	0.70
182	0.70	0.57	0.73	0.75	0.71	0.74	0.70	0.72	0.60	0.76
183	0.70	0.71	0.68	0.80	0.70	0.76	0.57	0.69	0.80	0.75
184	0.75	0.73	0.76	0.74	0.73	0.56	0.63	0.76	0.83	0.63
185	0.71	0.83	0.79	0.46	0.74	0.44	0.87	0.85	0.57	0.75
186	0.75	0.70	0.71	0.63	0.80	0.65	0.72	0.72	0.73	0.72
187	0.77	0.83	0.74	0.73	0.79	0.80	0.72	0.57	0.46	0.48
188	0.79	0.74	0.71	0.74	0.67	0.76	0.60	0.71	0.73	0.75
189	0.71	0.67	0.74	0.71	0.74	0.72	0.72	0.68	0.73	0.71
190	0.73	0.71	0.72	0.68	0.73	0.78	0.72	0.75	0.76	0.73
191	0.75	0.70	0.78	0.71	0.77	0.80	0.71	0.81	0.79	0.77
192	0.71	0.74	0.75	0.74	0.81	0.67	0.70	0.75	0.75	0.64
193	0.81	0.76	0.80	0.75	0.75	0.70	0.73	0.71	0.76	0.68
194	0.76	0.81	0.81	0.86	0.80	0.83	0.83	0.72	0.78	0.75
195	0.79	0.65	0.73	0.74	0.77	0.69	0.53	0.72	0.81	0.72

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi-cation	Monitoring	Feed Back	Back Up	Coordi-nation	Task Interdependence
196	0.79	0.81	0.76	0.80	0.79	0.80	0.72	0.87	0.83	0.74
197	0.71	0.75	0.72	0.73	0.75	0.72	0.68	0.66	0.73	0.65
198	0.73	0.76	0.74	0.66	0.66	0.74	0.75	0.57	0.75	0.74
199	0.75	0.61	0.82	0.72	0.82	0.59	0.80	0.74	0.61	0.85
200	0.78	0.68	0.72	0.72	0.74	0.75	0.74	0.78	0.75	0.71
201	0.79	0.71	0.79	0.74	0.74	0.83	0.83	0.83	0.76	0.79
202	0.77	0.74	0.75	0.65	0.77	0.68	0.74	0.73	0.70	0.66
203	0.75	0.72	0.75	0.63	0.45	0.72	0.71	0.75	0.48	0.72
204	0.60	0.72	0.58	0.72	0.73	0.78	0.72	0.62	0.71	0.70
205	0.56	0.73	0.71	0.70	0.77	0.50	0.85	0.65	0.70	0.77
206	0.77	0.71	0.76	0.59	0.75	0.62	0.62	0.81	0.73	0.77
207	0.70	0.61	0.74	0.72	0.54	0.73	0.64	0.76	0.73	0.70
208	0.81	0.66	0.66	0.67	0.74	0.78	0.78	0.74	0.78	0.79
209	0.79	0.73	0.81	0.79	0.77	0.83	0.75	0.81	0.72	0.78
210	0.70	0.64	0.68	0.72	0.72	0.71	0.76	0.70	0.75	0.84
211	0.73	0.76	0.72	0.69	0.72	0.68	0.76	0.76	0.72	0.78
212	0.81	0.62	0.77	0.82	0.74	0.74	0.69	0.80	0.56	0.71
213	0.71	0.64	0.76	0.73	0.72	0.62	0.81	0.74	0.76	0.75
214	0.75	0.76	0.73	0.73	0.61	0.63	0.72	0.71	0.71	0.63
215	0.84	0.74	0.73	0.65	0.71	0.80	0.76	0.70	0.81	0.65
216	0.73	0.71	0.75	0.75	0.67	0.74	0.79	0.66	0.71	0.68
217	0.75	0.74	0.73	0.72	0.63	0.74	0.74	0.66	0.64	0.78

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi-cation	Monitoring	Feed Back	Back Up	Coordi-nation	Task Interdependence
218	0.70	0.74	0.73	0.77	0.78	0.68	0.69	0.72	0.81	0.76
219	0.79	0.76	0.78	0.75	0.77	0.41	0.39	0.38	0.81	0.72
220	0.74	0.70	0.72	0.64	0.71	0.74	0.72	0.76	0.67	0.64
221	0.77	0.74	0.72	0.76	0.77	0.65	0.72	0.80	0.69	0.85
222	0.75	0.73	0.73	0.73	0.71	0.64	0.64	0.73	0.64	0.76
223	0.70	0.73	0.75	0.72	0.79	0.53	0.57	0.60	0.80	0.76
224	0.60	0.75	0.73	0.62	0.61	0.75	0.76	0.72	0.72	0.71
225	0.75	0.80	0.65	0.76	0.65	0.67	0.72	0.78	0.78	0.81
226	0.73	0.70	0.73	0.73	0.74	0.74	0.74	0.66	0.66	0.66
227	0.71	0.74	0.72	0.70	0.74	0.72	0.71	0.62	0.57	0.59
228	0.70	0.59	0.71	0.71	0.74	0.63	0.54	0.76	0.72	0.73
229	0.50	0.59	0.72	0.70	0.75	0.73	0.63	0.72	0.73	0.74
230	0.71	0.74	0.58	0.71	0.63	0.73	0.72	0.77	0.65	0.73
231	0.79	0.79	0.63	0.64	0.59	0.87	0.87	0.80	0.85	0.85
232	0.72	0.82	0.58	0.87	0.58	0.52	0.72	0.89	0.87	0.83
233	0.59	0.60	0.51	0.50	0.42	0.47	0.51	0.58	0.57	0.68
234	0.52	0.60	0.52	0.48	0.62	0.67	0.52	0.48	0.52	0.63
235	0.58	0.54	0.61	0.51	0.59	0.62	0.53	0.51	0.54	0.61
236	0.72	0.71	0.53	0.71	0.73	0.48	0.71	0.70	0.47	0.78
237	0.72	0.74	0.75	0.73	0.73	0.81	0.67	0.59	0.66	0.80
238	0.64	0.57	0.62	0.57	0.58	0.44	0.44	0.62	0.50	0.55
239	0.49	0.88	0.51	0.76	0.82	0.92	0.47	0.72	0.72	0.81

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi-cation	Monitoring	Feed Back	Back Up	Coordi-nation	Task Interdependence
240	0.74	0.72	0.79	0.70	0.66	0.74	0.73	0.63	0.63	0.76
241	0.74	0.74	0.75	0.75	0.53	0.48	0.73	0.77	0.78	0.76
242	0.64	0.63	0.56	0.56	0.66	0.59	0.62	0.42	0.63	0.64
243	0.73	0.61	0.58	0.86	0.85	0.74	0.8	0.83	0.80	0.58
244	0.59	0.53	0.52	0.54	0.63	0.57	0.65	0.57	0.53	0.62
245	0.74	0.76	0.72	0.56	0.74	0.45	0.72	0.79	0.75	0.73
246	0.78	0.71	0.63	0.72	0.73	0.80	0.79	0.79	0.61	0.64
247	0.80	0.75	0.72	0.81	0.80	0.62	0.84	0.81	0.89	0.78
248	0.82	0.79	0.78	0.79	0.80	0.65	0.83	0.81	0.48	0.63
249	0.78	0.76	0.82	0.77	0.76	0.76	0.72	0.70	0.76	0.72
250	0.72	0.78	0.75	0.75	0.74	0.58	0.73	0.60	0.76	0.68
251	0.78	0.58	0.66	0.64	0.76	0.87	0.72	0.76	0.74	0.81
252	0.90	0.71	0.81	0.62	0.71	0.62	0.80	0.73	0.60	0.71
253	0.84	0.74	0.78	0.73	0.85	0.78	0.78	0.61	0.87	0.85
254	0.83	0.72	0.80	0.75	0.86	0.93	0.83	0.8	0.63	0.79
255	0.85	0.78	0.71	0.74	0.75	0.81	0.66	0.74	0.80	0.74
256	0.82	0.78	0.87	0.88	0.89	0.88	0.82	0.87	0.88	0.77
257	0.87	0.84	0.78	0.79	0.75	0.79	0.77	0.69	0.80	0.79
258	0.75	0.49	0.80	0.56	0.75	0.47	0.74	0.75	0.70	0.71
259	0.89	0.78	0.73	0.75	0.77	0.83	0.80	0.86	0.65	0.81
260	0.80	0.83	0.84	0.88	0.91	0.82	0.89	0.93	0.83	0.91
261	0.84	0.86	0.88	0.81	0.74	0.83	0.87	0.91	0.67	0.85

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordi -nation	Task Interdependence
262	0.74	0.73	0.73	0.71	0.79	0.83	0.52	0.76	0.56	0.58
263	0.83	0.82	0.66	0.70	0.86	0.85	0.74	0.57	0.80	0.58
264	0.80	0.75	0.81	0.76	0.71	0.77	0.79	0.72	0.79	0.66
265	0.80	0.77	0.39	0.53	0.76	0.85	0.70	0.50	0.76	0.75
266	0.82	0.77	0.76	0.72	0.80	0.73	0.77	0.74	0.73	0.79
267	0.80	0.80	0.75	0.74	0.68	0.74	0.65	0.69	0.74	0.88
268	0.84	0.72	0.51	0.75	0.70	0.83	0.78	0.34	0.81	0.56
269	0.82	0.81	0.83	0.88	0.68	0.81	0.81	0.87	0.87	0.77
270	0.83	0.79	0.83	0.82	0.81	0.70	0.84	0.81	0.83	0.74
271	0.87	0.80	0.74	0.74	0.79	0.86	0.84	0.81	0.74	0.80
272	0.75	0.76	0.76	0.79	0.64	0.76	0.74	0.30	0.65	0.73
273	0.81	0.69	0.87	0.79	0.84	0.68	0.71	0.86	0.86	0.79
274	0.76	0.70	0.74	0.79	0.83	0.86	0.78	0.73	0.72	0.66
275	0.73	0.61	0.81	0.74	0.73	0.87	0.74	0.72	0.83	0.67
276	0.81	0.80	0.83	0.81	0.47	0.80	0.81	0.87	0.83	0.69
277	0.77	0.76	0.79	0.59	0.81	0.74	0.67	0.81	0.73	0.74
278	0.81	0.70	0.87	0.79	0.73	0.82	0.72	0.71	0.68	0.72
279	0.80	0.74	0.77	0.81	0.18	0.61	0.56	0.74	0.73	0.72
280	0.81	0.74	0.67	0.76	0.77	0.74	0.72	0.76	0.76	0.67
281	0.81	0.63	0.86	0.82	0.91	0.67	0.57	0.80	0.72	0.79
282	0.72	0.73	0.78	0.66	0.70	0.74	0.71	0.76	0.74	0.75
283	0.81	0.88	0.79	0.74	0.77	0.72	0.70	0.87	0.85	0.75

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi -cation	Monitoring	Feed Back	Back Up	Coordi -nation	Task Interdependence
284	0.76	0.72	0.73	0.75	0.85	0.54	0.80	0.76	0.80	0.56
285	0.73	0.75	0.73	0.70	0.77	0.57	0.59	0.72	0.71	0.80
286	0.75	0.78	0.78	0.78	0.58	0.85	0.72	0.63	0.76	0.67
287	0.81	0.87	0.79	0.57	0.75	0.92	0.83	0.89	0.47	0.63
288	0.79	0.67	0.70	0.80	0.77	0.80	0.78	0.69	0.80	0.81
289	0.75	0.77	0.79	0.72	0.18	0.76	0.57	0.61	0.81	0.79
290	0.78	0.79	0.68	0.71	0.71	0.73	0.48	0.79	0.67	0.75
291	0.79	0.77	0.83	0.88	0.86	0.83	0.94	0.83	0.92	0.78
292	0.85	0.83	0.81	0.75	0.65	0.75	0.80	0.88	0.77	0.81
293	0.83	0.73	0.81	0.78	0.82	0.67	0.76	0.8	0.74	0.71
294	0.67	0.70	0.81	0.79	0.63	0.81	0.63	0.77	0.76	0.76
295	0.70	0.81	0.82	0.74	0.65	0.73	0.66	0.70	0.67	0.74
296	0.84	0.80	0.77	0.77	0.78	0.71	0.75	0.74	0.81	0.80
297	0.74	0.79	0.78	0.87	0.64	0.63	0.72	0.63	0.87	0.79
298	0.80	0.73	0.72	0.78	0.57	0.66	0.79	0.71	0.72	0.66
299	0.74	0.73	0.88	0.64	0.48	0.70	0.81	0.76	0.57	0.79
300	0.79	0.76	0.78	0.63	0.78	0.65	0.64	0.78	0.77	0.78
301	0.72	0.80	0.75	0.71	0.79	0.76	0.59	0.76	0.78	0.81
302	0.71	0.73	0.76	0.69	0.72	0.75	0.69	0.70	0.78	0.75
303	0.76	0.66	0.77	0.78	0.73	0.85	0.70	0.76	0.75	0.73
304	0.79	0.88	0.71	0.71	0.83	0.83	0.52	0.72	0.80	0.52
305	0.74	0.75	0.71	0.72	0.60	0.83	0.72	0.75	0.76	0.57

Team Number	Team Performance	Guanxi	Team Orientation	Team Leadership	Communi-cation	Monitoring	Feed Back	Back Up	Coordi-nation	Task Interdependence
306	0.71	0.75	0.76	0.74	0.71	0.62	0.62	0.58	0.71	0.76
307	0.76	0.75	0.74	0.73	0.64	0.76	0.75	0.66	0.74	0.66
308	0.71	0.80	0.64	0.59	0.46	0.76	0.86	0.78	0.78	0.73
309	0.55	0.75	0.77	0.58	0.77	0.78	0.76	0.74	0.51	0.73
310	0.70	0.68	0.77	0.69	0.72	0.65	0.76	0.77	0.81	0.77
311	0.75	0.76	0.58	0.75	0.77	0.73	0.59	0.76	0.79	0.60
312	0.73	0.61	0.71	0.77	0.55	0.71	0.61	0.77	0.80	0.72
313	0.73	0.71	0.76	0.70	0.63	0.83	0.76	0.71	0.64	0.62
314	0.75	0.82	0.79	0.47	0.23	0.83	0.74	0.46	0.85	0.77
315	0.72	0.79	0.72	0.73	0.77	0.64	0.76	0.79	0.55	0.52
316	0.73	0.79	0.73	0.78	0.71	0.81	0.72	0.72	0.85	0.79
317	0.76	0.81	0.78	0.51	0.83	0.59	0.41	0.76	0.81	0.81
318	0.67	0.65	0.44	0.45	0.52	0.65	0.62	0.41	0.54	0.65
319	0.75	0.72	0.69	0.64	0.78	0.72	0.74	0.67	0.82	0.82
320	0.73	0.57	0.60	0.80	0.82	0.52	0.83	0.78	0.70	0.73
321	0.72	0.72	0.63	0.72	0.77	0.78	0.84	0.75	0.65	0.70
322	0.87	0.73	0.64	0.65	0.57	0.86	0.86	0.86	0.86	0.88
323	0.72	0.72	0.60	0.71	0.63	0.76	0.63	0.72	0.80	0.79

Note. The following 11 teams are dropped because they did not achieve a reliability of .70 or higher on at least 7 scales: 33, 35, 42, 83, 233, 234, 235, 238, 242, 244, and 318.

Appendix E

Confirmatory Factor Analyses of the Components

Table E1

Guanxi: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.74	.45	.55
ITEM2	.72	.48	.52
ITEM3	.83	.30	.70
ITEM4	.81	.35	.65
ITEM5	.64	.59	.41
ITEM6	.63	.60	.39
ITEM7	.65	.58	.40
ITEM8	.28	.92	.08
ITEM9	.68	.53	.47
ITEM10	.70	.52	.48
ITEM11	.80	.37	.63
ITEM12	.75	.43	.57
ITEM13	.80	.37	.63
ITEM14	.80	.35	.65
ITEM15	.73	.47	.53

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 90$, $p < .01$) = 532.10, GFI = .71, CFI = .80, NNFI = .77, RMSEA = .13. All *t*-values are greater than 2.00.

Table E2

Task Interdependence: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.80	.37	.63
ITEM2	.82	.32	.68
ITEM3	.72	.48	.52
ITEM4	.65	.58	.42
ITEM5	.64	.60	.40
ITEM6	.32	.89	.11
ITEM7	.66	.57	.43
ITEM8	.64	.59	.41

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 20$, $p < .01$) = 160.81, GFI = .11, CFI = .71, NNFI = .79, RMSEA = .15. All t-values are greater than 2.00.

Table E3

Team Leadership: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.70	.51	.51
ITEM2	.76	.43	.49
ITEM3	.78	.38	.57
ITEM4	.80	.36	.62
ITEM5	.80	.37	.64
ITEM6	.71	.49	.63
ITEM7	.73	.47	.53
ITEM8	.80	.36	.64
ITEM9	.77	.40	.60
ITEM10	.75	.44	.56
ITEM11	.78	.39	.61
ITEM12	.75	.43	.57
ITEM13	.81	.35	.65
ITEM14	.80	.36	.64
ITEM15	.76	.42	.58
ITEM16	.77	.41	.59
ITEM17	.43	.82	.18
ITEM18	.37	.87	.13

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 135$, $p < .01$) = 428.14, GFI = .83, CFI = .90, NNFI = .90, RMSEA = .08. All *t*-values are greater than 2.00.

Table E4

Team Orientation: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.84	.30	.70
ITEM2	.83	.32	.68
ITEM3	.73	.46	.54
ITEM4	.77	.41	.59
ITEM5	.83	.31	.69
ITEM6	.81	.34	.66
ITEM7	.80	.35	.65
ITEM8	.70	.52	.49
ITEM9	.80	.36	.64
ITEM10	.79	.38	.62
ITEM11	.78	.40	.60
ITEM12	.74	.46	.54
ITEM13	.84	.29	.71
ITEM14	.83	.31	.69
ITEM15	.66	.56	.44
ITEM16	.80	.36	.64
ITEM17	.76	.42	.58
ITEM18	.78	.39	.61
ITEM19	.76	.43	.57
ITEM20	.62	.61	.39

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 170$, $p < .01$) = 563.47, GFI = .83, CFI = .91, NNFI = .90, RMSEA = .09. All *t*-values are greater than 2.00.

Table E5

Communication: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.68	.54	.61
ITEM2	.71	.49	.46
ITEM3	.83	.32	.51
ITEM4	.80	.36	.68
ITEM5	.69	.52	.64
ITEM6	.78	.39	.48
ITEM7	.76	.43	.57
ITEM8	.82	.33	.67
ITEM9	.84	.29	.71
ITEM10	.75	.44	.56
ITEM11	.80	.36	.64

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 44$, $p < .01$) = 223.94, GFI = .88, CFI = .91, NNFI = .93, RMSEA = .11. All t-values are greater than 2.00.

Table E6

Backup: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.69	.52	.60
ITEM2	.72	.49	.48
ITEM3	.60	.64	.51
ITEM4	.84	.30	.36
ITEM5	.83	.31	.70
ITEM6	.78	.40	.69
ITEM7	.75	.43	.57
ITEM8	.77	.40	.60
ITEM9	.78	.40	.60

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 27$, $p < .01$) = 122.25, GFI = .92, CFI = .94, NNFI = .92, RMSEA = .11. All *t*-values are greater than 2.00.

Table E7

Monitoring: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.79	.38	.62
ITEM2	.81	.35	.65
ITEM3	.75	.44	.56
ITEM4	.66	.57	.43
ITEM5	.70	.51	.49
ITEM6	.68	.53	.47
ITEM7	.51	.74	.26
ITEM8	.71	.50	.50
ITEM9	.75	.44	.56

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 27$, $p < .01$) = 142.79, GFI = .89, CFI = .90, NNFI = .87, RMSEA = .13. All *t*-values are greater than 2.00.

Table E8

Feedback: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.60	.64	.36
ITEM2	.74	.46	.54
ITEM3	.55	.70	.30
ITEM4	.69	.52	.48
ITEM5	.79	.37	.63
ITEM6	.84	.30	.70
ITEM7	.67	.56	.44
ITEM8	.74	.45	.55
ITEM9	.84	.30	.70

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 27$, $p < .01$) = 139.37, GFI = .89, CFI = .91, NNFI = .88, RMSEA = .13. All *t*-values are greater than 2.00.

Table E9

Coordination: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations (R^2)

	Factor Loadings	Theta Delta	R^2
ITEM1	.83	.32	.68
ITEM2	.84	.30	.70
ITEM3	.73	.46	.54
ITEM4	.82	.33	.67
ITEM5	.79	.37	.63
ITEM6	.84	.30	.70
ITEM7	.84	.29	.71
ITEM8	.88	.23	.77
ITEM9	.79	.37	.63

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 27$, $p < .01$) = 63.85, GFI = .96, CFI = .98, NNFI = .98, RMSEA = .06. All *t*-values are greater than 2.00.

Table E10

Team performance: Maximum Likelihood Factor Loadings for Lambda X, Theta Deltas, and Squared Multiple correlations

	Factor Loadings	Theta Delta	R^2
ITEM1	.81	.34	.66
ITEM2	.81	.34	.66
ITEM3	.40	.84	.16
ITEM4	.65	.57	.43
ITEM5	.79	.37	.63
ITEM6	.84	.30	.70
ITEM7	.76	.42	.58
ITEM8	.76	.42	.58
ITEM9	.78	.39	.61
ITEM10	.80	.36	.64
ITEM11	.77	.40	.60
ITEM12	.81	.35	.65
ITEM13	.83	.31	.69
ITEM14	.85	.28	.72
ITEM15	.80	.36	.64
ITEM16	.83	.31	.69
ITEM17	.77	.40	.60
ITEM18	.76	.42	.58
ITEM19	.63	.60	.40
ITEM20	.71	.50	.50
ITEM21	.84	.30	.70

Note. $N = 312$. Estimates of goodness-of-fit are: χ^2 ($df = 189$, $p < .01$) = 806.60, GFI = .80, CFI = .89, NNFI = .88, RMSEA = .09. All *t*-values are greater than 2.00.

Appendix F

Means, Standard Deviations, and Intercorrelations among Subscales

Subscales	Mean	SD	1	2	3	4	5	6	7	8
1. GX1	3.40	.53	--							
2. GX2	3.53	.51	.75*	--						
3. GX3	3.43	.52	.62*	.72*	--					
4. TI1	3.53	.46	.33*	.34*	.31*	--				
5. TI2	3.66	.46	.36*	.28*	.38*	.69*	--			
6. TL1	3.54	.50	.46*	.50*	.47*	.22*	.16*	--		
7. TL2	3.61	.51	.43*	.37*	.43*	.02	.05	.64*	--	
8. TL3	3.59	.50	.45*	.27*	.45*	.33*	.29*	.85*	.74*	--
9. TO1	3.59	.51	.51*	.43*	.52*	.23*	-.06	.41*	.53*	.11
10. TO2	3.65	.49	.52*	.46*	.52*	.08	.21*	.39*	.59*	.58*
11. TO3	3.59	.53	.51*	.33*	.54*	.17*	.24*	-.06	.23*	.19*
12. COM1	3.60	.51	.12	.32*	.39*	.30*	.32*	.52*	.24*	.35*
13. COM2	3.59	.54	.35*	.25*	.47*	.39*	.33*	.34*	.32*	.44*
14. COM3	3.51	.54	.39*	.28*	.37*	.26*	.19*	.41*	.15*	.31*
15. BUP1	3.48	.53	.26*	.39*	.38*	.27*	.34*	.39*	.46*	.49*
16. BUP2	3.53	.55	.25*	.48*	.29*	.30*	.36*	.51*	.45*	.49*
17. BUP3	3.51	.52	.42*	.43*	.30*	.31*	.23*	.25*	.50*	.50*
18. MON1	3.41	.49	.37*	.35*	.33*	.18*	.04	.49*	.49*	.49*
19. MON2	3.44	.43	.39*	.39*	.34*	06	.25*	.49*	.46*	.46*
20. MON3	3.46	.49	.35*	.34*	.34*	.16*	.29*	.46*	.47*	.48*
21. FB1	3.49	.51	.38*	.39*	.40*	.09	.30*	.48*	.44*	.45*
22. FB2	3.31	.53	.32*	.33*	.28*	.17*	-.01	.39*	.39*	.41*
23. FB3	3.46	.48	.39*	.41*	.38*	.19*	.31*	.37*	.37*	.38*
24. COOR1	3.59	.57	.47*	.51*	.49*	.42*	.46*	.51*	.50*	.51*
25. COOR2	3.57	.55	.48*	.39*	.46*	.10	.44*	.54*	.52*	.55*
26. COOR3	3.63	.55	.45*	.46*	.50*	.28*	.48*	.52*	.51*	.51*
27. TP1	3.53	.49	.40*	.52*	.51*	.32*	.41*	.49*	.28*	.48*
28. TP2	3.55	.49	.43*	.51*	.51*	.41*	.46*	.39*	.48*	.49*
29. TP3	3.55	.48	.51*	.48*	.50*	.32*	.39*	.49*	.47*	.49*

Subscales	Mean	SD	9	10	11	12	13	14	15	16
1. GX1	3.40	.53								
2. GX2	3.53	.51								
3. GX3	3.43	.52								
4. TI1	3.53	.46								
5. TI2	3.66	.46								
6. TL1	3.54	.50								
7. TL2	3.61	.51								
8. TL3	3.59	.50								
9. TO1	3.59	.51	--							
10. TO2	3.65	.49	.67*	--						
11. TO3	3.59	.53	.76*	.67*	--					
12. COM1	3.60	.51	.33*	.22*	.25*	--				
13. COM2	3.59	.54	.53*	.10	.11	.69*	--			
14. COM3	3.51	.54	.48*	.17*	.28*	.62*	.58*	--		
15. BUP1	3.48	.53	.45*	.46*	.48*	.47*	.52*	.49*	--	
16. BUP2	3.53	.55	.40*	.47*	.10	.44*	.57*	.45*	.76*	--
17. BUP3	3.51	.52	.51*	.51*	.20*	.50*	.51*	.47*	.72*	.68*
18. MON1	3.41	.49	.42*	.44*	.25*	.44*	.46*	.46*	.50*	.46*
19. MON2	3.44	.43	.45*	.46*	.37*	.38*	.41*	.37*	.46*	.45*
20. MON3	3.46	.49	.48*	.50*	.28*	.40*	.46*	.39*	.45*	.42*
21. FB1	3.49	.51	.44*	.45*	.37*	.42*	.39*	.42*	.54*	.57*
22. FB2	3.31	.53	.36*	.37*	.32*	.46*	.37*	.44*	.51*	.46*
23. FB3	3.46	.48	.36*	.39*	.29*	.38*	.42*	.47*	.47*	.48*
24. COOR1	3.59	.57	.54*	.45*	.46*	.46*	.49*	.34*	.44*	.53*
25. COOR2	3.57	.55	.54*	.55*	.42*	.53*	.54*	.42*	.49*	.56*
26. COOR3	3.63	.55	.55*	.56*	.50*	.46*	.52*	.37*	.53*	.51*
27. TP1	3.53	.49	.54*	.54*	.41*	.43*	.34*	.32*	.43*	.52*
28. TP2	3.55	.49	.58*	.57*	.36*	.45*	.28*	.43*	.37*	.46*
29. TP3	3.55	.48	.54*	.56*	.44*	.43*	.30*	.39*	.42*	.48*

Subscales	Mean	SD	17	18	19	20	21	22	23	24
1. GX1	3.40	.53								
2. GX2	3.53	.51								
3. GX3	3.43	.52								
4. TI1	3.53	.46								
5. TI2	3.66	.46								
6. TL1	3.54	.50								
7. TL2	3.61	.51								
8. TL3	3.59	.50								
9. TO1	3.59	.51								
10. TO2	3.65	.49								
11. TO3	3.59	.53								
12. COM1	3.60	.51								
13. COM2	3.59	.54								
14. COM3	3.51	.54								
15. BUP1	3.48	.53								
16. BUP2	3.53	.55								
17. BUP3	3.51	.52	--							
18. MON1	3.41	.49	.37*	--						
19. MON2	3.44	.43	.31*	.51*	--					
20. MON3	3.46	.49	.27*	.42*	.51*	--				
21. FB1	3.49	.51	.54*	.39*	.478	.40*	--			
22. FB2	3.31	.53	.45*	.48*	.42*	.32*	.48*	--		
23. FB3	3.46	.48	.47*	.42*	.29*	.34*	.45*	.51*	--	
24. COOR1	3.59	.57	.30*	.35*	.39*	.40*	-.17*	.32*	.45*	--
25. COOR2	3.57	.55	.33*	.41*	.42*	.44*	-.16*	.42*	.47*	.60*
26. COOR3	3.63	.55	.35*	.42*	.40*	.42*	-.07*	.37*	.34*	.58*
27. TP1	3.53	.49	.22*	.35*	.40*	.21*	.01	.37*	.22*	.39*
28. TP2	3.55	.49	.38*	.32*	.38*	.28*	.10	.20*	.37*	.29*
29. TP3	3.55	.48	.29*	.28*	.45*	.42*	-.08	.37*	.35*	.23*

Subscales	Mean	SD	25	26	27	28	29
1. GX1	3.40	.53					
2. GX2	3.53	.51					
3. GX3	3.43	.52					
4. TI1	3.53	.46					
5. TI2	3.66	.46					
6. TL1	3.54	.50					
7. TL2	3.61	.51					
8. TL3	3.59	.50					
9. TO1	3.59	.51					
10. TO2	3.65	.49					
11. TO3	3.59	.53					
12. COM1	3.60	.51					
13. COM2	3.59	.54					
14. COM3	3.51	.54					
15. BUP1	3.48	.53					
16. BUP2	3.53	.55					
17. BUP3	3.51	.52					
18. MON1	3.41	.49					
19. MON2	3.44	.43					
20. MON3	3.46	.49					
21. FB1	3.49	.51					
22. FB2	3.31	.53					
23. FB3	3.46	.48					
24. COOR1	3.59	.57					
25. COOR2	3.57	.55					
26. COOR3	3.63	.55	.28*	--			
27. TP1	3.53	.49	.35*	.26*	--		
28. TP2	3.55	.49	.36*	.25*	.59*	--	
29. TP3	3.55	.48	.30*	.33*	.67*	.65*	--

Note. $N = 312$. Abbreviations are: GX = Guanxi, TI = Task Interdependence, TL = Team Leadership, COM = Communication, BUP = Backup, MON = Monitoring, FB = Feedback, COOR = Coordination, TP = Team Performance. * $p < .05$.

VITA

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