Colleague guanxi *intensity: Scale development and validation*

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Abstract

This research reviews the constructs and measurements of *guanxi* and concludes that colleague *guanxi* is appropriately conceptualized as a multidimensional construct that describes Chinese colleague relationships. The development of a colleague *guanxi* scale with four dimensions is described. Two studies test the convergent, discriminant, and nomological validity of the *guanxi* scale. In validation tests *guanxi* intensity increases with cognition features (subjective fit and cognitive trust) and results in a positive affect (affective trust). Contributions of the colleague *guanxi* scale are offered.

Keywords: *guanxi*, scale development, colleague relationship, cognitive trust, affective trust, subject fit

INTRODUCTION

Social exchange theory views interpersonal relationships as a balance model of giving and receiving (Homans, 1958). Western scholars apply a social exchange perspective to delineate the exchange of resources between two parties in an organization and propose several constructs to describe the strength of exchange in the formal relationships, including leader-member exchange (abbreviated as LMX; Graen & Uhl-Bien, 1995; Sparrowe & Liden, 1997; Chen & Tjosvold, 2006), team-member exchange (abbreviated as TMX; Seers, 1989; Seers, Petty, & Cashman, 1995), and coworker exchange (abbreviated as CWX; Sherony & Green, 2002). However, the social concept of 'guanxi' (Chinese interpersonal relationships) should be considered when discussing Chinese coworker relationships since Chinese often mix formal working relationships with personal ones.

Guanxi is an indigenous Chinese construct defined as 'an informal, particularistic personal connection between two individuals who are bounded by an implicit psychological contract to follow the social norm of *guanxi*' (Chen & Chen, 2004: 306). Recently, the *guanxi* concept has received increasing attention and gains its status as a legitimate socio-cultural construct in Western mainstream literatures of sociology, social psychology, business, and management (Chen & Chen, 2004). The concept of *guanxi* is different from interpersonal relationships in Western societies. Confucius teachings have encouraged Chinese people to respect their elders and leaders (Huang, 200), which leads to higher levels of power distance in organizational hierarchies in mainland China and Taiwan than those in the West (Hofstede, 1980).

This cultural difference results in divergent perspectives when discussing vertical and horizontal coworker relationships. The components/dimensions between LMX and TMX/CWX are similar in the emphasis placed on balanced reciprocity including mutual respect, trust, and obligation between two parties (Seers, Petty, & Cashman, 1995; Sherony & Green, 2002). Alternatively, supervisor-subordinate

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guanxi (vertical) and colleague *guanxi* (horizontal) are distinct with differential expectations of behavioral norms (Chen & Chen, 2004). For example, the notions of loyalty, obedience, and respect are expected of the subordinate by the superior; while the notion of wisdom and leadership are expected of the superior by the subordinate.

Literature has well documented the supervisor-subordinate *guanxi* scale and its related work outcomes (Law, Wong, Wang, & Wang, 2000; Wong, Tinsley, Law, & Mobley, 2003b; Chen & Tjosvold, 2006; Cheung, Wu, Chan, & Wong, 2009). However, the effect of *guanxi* between two colleagues has not received sufficient attention due to the absence of a suitable colleague *guanxi* measurement scale. Two studies dealt with the horizontal coworker relationship from a dyadic viewpoint (Sherony & Green, 2002; Chen & Peng, 2008). In terms of approaching colleague relationship based on social exchange theory, Sherony and Green (2002) investigated the CWX relationships on a dyadic level and found negative effects of a worker's CWX to the organization commitment. They also noted that 'CWX perhaps would be a more powerful predictor of work attitudes if we could identify significant coworkers in the network' (p. 547). The other study addressing the colleague relationship from *guanxi* concept, Chen and Peng (2008) provided evidence that coworker closeness is changeable by incidents, thus supporting the dynamic nature of colleague *guanxi*. The appeal of emphasizing dyadic and horizontal coworker relationships from a dynamic viewpoint necessitates the development of a scale for measuring *guanxi* intensity.

Recent studies recommend that *guanxi* be treated as a continuous variable and support the notion that *guanxi* is elastic, that it is dynamic and can wax and wane within a given *guanxi* relationship (Chen & Chen, 2004; Chen, Friedman, Yu, Fang, & Lu, 2009). Empirical studies have shown that the *guanxi* can increase or decrease due to positive or negative incidents when interacting (Chen & Peng, 2008). For these reasons, the accepted rules of interpersonal interaction behind the *guanxi* concept may be a way to structure a model of *guanxi* intensity between two colleagues.

The central aim of our research thus deals with development of a reliable and valid *guanxi* scale based on *guanxi* rules and suggests a model of the *guanxi* construct with specific norms and obligations. This enables us to contribute to the extant literature in three ways. First, since *guanxi* is widespread in the Chinese business culture our study can stimulate more empirical inquiry into what Chen and Chen (2004) have noted 'a few major weaknesses in the literature of Chinese *guanxi* theory and research concerned .. not on the construct building and operationalization' (p. 309) by the testing of a *guanxi* measurement through the norms and obligations of interaction. Second, examining colleague *guanxi* in the Chinese context contributes to the Chinese management literature since *guanxi* plays a critical role in Chinese organizational life due to the relation-oriented nature of Chinese society (Hwang, 1987). Our development of a colleague *guanxi* scale can help explain the nature of *guanxi* dynamics of horizontal coworker relationships. Finally, a validated colleague *guanxi* scale uncovers emic (culturally specific) perspectives of the unbalanced reciprocity system to advance the understanding of this specific emic term by Westerners.

The following sections of this study describe the development of a *guanxi* scale for measuring *guanxi* perception of a specific colleague using the *guanxi* rules. We also discuss the antecedents of *guanxi* development and use *guanxi* as a predictor of attitudes between two colleagues. We conducted two studies in order to fulfill our research objectives. Study one was performed to develop and validate a colleague *guanxi* scale. Study two was performed to cross-validate relationships among *guanxi* and related constructs.

LITERATURE REVIEW

Dyadic approach to *guanxi* concept

Numerous scholars have claimed that *guanxi* is a critical concept for business operations in mainland China, Hong Kong, Japan, Korea, and Taiwan (Alston, 1989; Yeung & Tung, 199; Luo, 1997).

Fundamental to the value system of guanxi, the Chinese believe that the existence of an individual is identified by relationships with others (Brunner, Chen, Sun, & Zhou, 1989) and consider *guanxi* as a foundation for developing interpersonal networks for support and protection.

Previous studies have used the common social identities to indicate the effects of *guanxi* dynamics on related work outcomes from two perspectives: network relationship (Hom & Xiao, 2011) and dyadic relationship (Tsui & Farh, 1997; Farh, Tsui, Xin, & Cheng, 1998). One body of research on *guanxi* based on social network theory (e.g., Luo, 1997; Hom & Xiao, 2011) considers *guanxi* as a practice that exists within current social networks in which trust and exchange between individuals is established, changed and lost, as the social network evolves to facilitate relational and economic certainty for individuals. Most Western theories focus on network structure and individuals' positions in the network rather than on the content and process of dyadic relationships (Chen & Chen, 2004). However, the *guanxi* network is formed and aggregated by numerous single ties or connections, which means *guanxi* is essentially personal and operates between two parties (Alston, 1989). When attempting to examine the effect of *guanxi* on attitudes or interactive behaviors at dyadic level, it is necessary to confirm the *guanxi* bases (ties) and *guanxi* intensity as it is perceived by an individual. Thus, the other body of research on *guanxi* is based on dyadic perspective. Chen and Chen (2004) provide reasons for emphasizing the eco-centered dyadic *guanxi*. First, *guanxi* dyads are fundamental units of *guanxi* networks (Fei, 1939). In the classic model of differentiated order, Fei (1939) proposed an ego-centered network of *guanxi* and contended that the inter-connectedness among the various *guanxi* entities is not important as long as each entity is connected to the self. Second, Chinese *guanxi* has been invested with strong dyadic sentiment and obligations independent of shared group identity.

In terms of *guanxi* bases (ties), scholars of sociology and social psychology claim that *guanxi* originated from ancient Confucian ideology and is derived from Five Cardinal Relationships (named 'wu lun' in Chinese): ruler–subject, father–son, husband–wife, elder brother–younger brother, and friend–friend (Tsui & Farh, 1997). The fundamental Confucian assumption of human kind is that individuals exist in relation to others and modern Chinese societies (on the mainland or overseas) remain very relationship oriented (Redding & Wong, 1986 in Chen & Chen, 2004).

However, the effect of *guanxi* bases may change over time because *guanxi* bases of initial acquaintances are relatively lean in interpersonal significance; whereas, the same bases of long-time partners may be pregnant with trust and qing (feeling) (Chen & Chen, 2004). To test these differences, it is essential to assess *guanxi* intensity in addition to identifying *guanxi* bases. For example, an analysis of the social psychology of Chinese concluded that Chinese tend to adopt multiple standards of behavior for interacting with the different persons around them (Hwang, 1987). Hwang explained, when one person interacts with another, the first question he or she would carefully consider is 'What is the *guanxi* between us?' and 'How strong is our *guanxi*?'

Guanxi's unbalanced reciprocal system

Social exchange theory views interpersonal relationships as a balance model of giving and receiving (Homans, 1958). The theoretical foundation of social exchange theory is the norm of reciprocity which is explained as: 'The reciprocity norm usually refers to a set of socially accepted rules regarding a transaction in which a party extending a resource to another party obligates the latter to return the favor' (Wu et al., 2006: 378). Sahlins (1972) viewed reciprocal exchange as a continuum and proposed three reciprocal types including 'negative reciprocity,' 'balanced' reciprocity' and 'generalized reciprocity' with three dimensions: immediacy of return, equivalence of returns, and interest. 'Generalized reciprocity' features an indefinite reimbursement period, undefined equivalency of return, and low self-interest suitably to describe the *guanxi* concept. Thus, according to the reciprocity norm proposed by Wu et al. (2006) and Sahlins' (1972) reciprocity typology, we consider *guanxi* is a special case of social exchange theory in that

both emphasize the obligation in resource exchanges between two parties; nevertheless, the operations of the reciprocal system is different in values and the time frame of repayment (Hwang, 1987; Alston, 1989; Liu, 1993; Yeung & Tung, 1996; Hackley & Dong, 2001). For example, social transactions in the West are usually seen as isolated occurrences. The objective is to maintain balance in each transaction, with great emphasis placed on immediate gains from the interaction. In contrast, *guanxi* is maintained and reinforced through continuous long-term association, reciprocating givers with more favors (Hackley & Dong, 2001), and where reciprocation ('bao' in Chinese) is not as timely and equivalent as it is in the Western perspective (Liu, 1993).

The unbalanced reciprocal system of *guanxi* can be explained by four reasons based on the Chinese culture roots of benevolence, complementarity, immeasurable affection, and long-term orientation. First, the unbalanced reciprocal system can be traced back to Confucianism, which encourages each individual to become a righteous person with virtue of benevolence (jen). There are two essential points of Confucian benevolence: loyalty (chung) and magnanimity (shu). Chung means doing one's best, while shu implies consideration (Lin & Ho, 2009). Based on the two virtues, people should consider others' feelings and repay favors and increase the value of the favor given (Yeung & Tung, 1996). The old Chinese ethical codes, 'Receive a droplet of generosity; repay like a gushing spring' and 'Do not impose on others what you yourself do not desire' are illustrative of the virtues.

Moreover, role obligation is also valued in Confucianism for maintaining the harmony of society. There are basically three kinds of *guanxi* relationships: family, familiar person and stranger (Tsui & Farh, 1997). An important Chinese cultural characteristic is to extend kin-relationships to people who are not kin (Chen et al., 2009). When extending from family to familiar relationship (quasi-family) renging and mianzi become the exchange rules (Hwang, 1987; Tsui & Farh, 1997). A singular feature of *guanxi* is that the weaker partner can call for special favors for which he/she does not have to equally reciprocate (Alston, 1989). When the giver provides resources to the receiver in need, the giver requires face (respect, honor) by giving support to the receiver. This is the basic rationale of unbalanced reciprocity according to the symbiotic system of *guanxi*, in which the *guanxi* of both sides is complementary instead of being equal (Hwang, 1987).

In addition to instrumental reciprocity, the other critical ingredient of *guanxi* is affective attachment (Hwang, 1987; Yang, 1994; Chen & Chen, 2004; Chua, Morris, & Ingram, 2009). One key feature of Chinese familial collectivism is that individuals are mutually dependent on each other not only for instrumental resources but also for socio-emotional support (Chua, Morris, & Ingram, 2009). Affective attachment refers to an emotional connection, understanding, and willingness to care for one another in any circumstance. They engage in such behavioral patterns to receive social rewards for fulfilling their role obligation. However, the immeasurability of affection represents the unequally reciprocation in *guanxi* relationships.

Finally, the long-term orientation is a cultural characteristic of China and East Asia (Hofstede & Bond, 1988), resulting in the emphasis on a future relationship in *guanxi* reciprocity. The timing of reciprocity in Western society is considered to be immediate, short-term, or discharged within a certain period of time (Tsui & Farh, 1997). In the Chinese society 'be my teacher for a day, be my teacher for a lifetime,' that is, the concept of lifetime reciprocity, or even reciprocity in afterlife, if one thinks favors are too great to be discharged in this life. Thus, the return need not and in most cases should not always be immediate. Immediate repayment is the 'worst and most foolish kind' (Yang, 1994: 144) because it closes rather than opens up relationships.

Guanxi's in-group identification

According to the differential order perspective (Fei, 1939), the *guanxi* effect is similar to the in-group/out-group dichotomy of social identity theory. The concept of *guanxi* and in- and out-group

membership both adhere to the idea of differentiating people into close and distant relationships. However, the ways to classify people into in- or out-groups behind these two concepts differ in two aspects: the criteria of identifying in-group membership and the orientation of in-group membership. First, the in-group membership of *guanxi* is based on common backgrounds such as birth place, alma matters (Tsui & Farh, 1997; Farh et al., 1998) or the psychological distance between *guanxi* partners in the *guanxi* net and the location of self (Chen & Chen, 2004). By contrast, in- and out-group identity in Western culture is based on demographic features; for example, race, gender, age, and educational level (Tsui & Farh, 1997) or competence/reliability (Liu, 1993). Second, the in-group concept of *guanxi* is directed toward dyad personal relationships and in- and out-group identity is directed toward a group. That is, Chinese nationals primarily define their self-concept in terms of connections and role relationships with significant others (relational self) rather than membership in symbolic groups (collective self) (Brewer & Chen, 2007: 137). Maintaining in-group reciprocal ties allow the Chinese to confirm self-identify. The perspective of differential order (named 'schaxu geju') (Fei, 1939) is used to exchange favors according to their relational distances with one another.

Classifications of coworker relationships

Coworker relationships can be separated into vertical (between supervisor and subordinate) and horizontal (between group members) relationships with different expectation of norms and behaviors (Chen & Chen, 2004; Chen & Peng, 2008).

Research on vertical relationships has focused on the nature of LMX (Graen & Uhl-Bien, 1995; Sparrowe & Liden, 1997; Chen & Tjosvold, 2006) and supervisor-subordinate *guanxi* (Law et al., 2000; Wong et al., 2003b; Chen & Tjosvold, 2006; Cheung et al., 2009). Chen and Tjosvold (2006) posit that the distinct concepts of LMX and leader-member *guanxi* can enhance participative leadership. Research on horizontal relationships, on the other hand, has pointed out the value of investigating relationships among organizational members other than that of the leader and follower (Seers, 1989; Sparrowe & Liden, 1997; Sherony & Green, 2002). From a social exchange perspective, CWX have been suggested to have influence on employees' work attitudes and performance (Seers, 1989; Seers, Petty, & Cashman, 1995; Liden, Wayne, & Sparrowe, 2000).

While there are several studies that offer scales for measuring supervisor-subordinate *guanxi* (vertical relationship) (e.g., Law et al., 2000; Wong et al., 2003b), there is no *guanxi* scale to measure colleague *guanxi* (horizontal relationship) to our knowledge. TMX differs from colleague *guanxi* in several features. First, TMX does not deal with colleague relationship on a dyadic level; rather, it is designed to address an employee's exchange relationship with a peer group as a team (Seers, 1989; Seers, Petty, & Cashman, 1995). Second, TMX and *guanxi* have distinct cultural origins; the former is developed and tested in a Western cultural context and *guanxi* is rooted in Chinese culture. Third, TMX focuses on the balanced reciprocity of resources between parties, while *guanxi* emphasizes an unbalanced reciprocal system embedded with specific rules. Thus, it is clear that TMX differs from colleague *guanxi* since it does not address dyadic relationships but focuses on the work team as the unit of analysis, such as the frequency and willingness of helping other team members get things done on the job or helping each others to be productive in a team (Seers, Petty, & Cashman, 1995). It appears that TMX cannot be used to measure the dyadic colleague *guanxi* intensity due to the asymmetry in levels of analysis, resources exchanged, and cultural differences.

Existing approaches to *guanxi* measurement

In terms of *guanxi* intensity, there are two fundamental approaches to the *guanxi* construct; one is categorical, and the other is dynamic (Chen & Chen, 2004). The categorical approach views *guanxi* as

given particularistic ties. Some studies use *guanxi* ties (e.g., family, relative, same natal origin, same family name, former classmate, etc.) to examine the effects of *guanxi*, wherein two parties will give preferential treatment to each other (Farh et al., 1998; Zhang & Yang, 1998). Jacobs (1979) posits, however, that a relational view of *guanxi* ties is inadequate for a full explanation of the many facets of *guanxi*.

Guanxi building depends not only on relational bases; it also includes the association between two parties (Liu, 1993). *Guanxi* ties are infrequent among colleagues in a business organization (Chou, 2002), and it may be inaccurate to assume that any kind of family tie is stronger than the familiar ties (Chen et al., 2009: 376). Cheng, Farh, and Chang (2002) hold that the force of *guanxi* is dependent upon an individual's subjective nature rather than an objective determination of the *guanxi* tie. Thus, viewing *guanxi* from a dynamic approach and treating *guanxi* as a continuous variable (Chen et al., 2009) are probably more suitable than *guanxi* ties alone to explain the nuances of *guanxi*.

Following the dynamic approach of measuring *guanxi* intensity, some authors have taken a uni-dimensional approach of 'informal interaction' (Chen & Tjosvold, 2006; Law et al., 2000; Wong, Ngo, & Wong, 2003a) or 'closeness' (Cheng, Farh, & Chang, 2002; Cheung & Gui, 2006) to capture *guanxi* intensity. The advantage of using informal interaction is that it describes specific activities to increase the explicitness of *guanxi* measurement. *Guanxi* measures focusing on closeness emphasize the importance of intensity in *guanxi* scaling, however, these uni-dimensional approaches of 'your closeness to the matchmaker' or 'your familiarity with the matchmaker' (Cheung & Gui, 2006), may not be sufficient to explain the diverse meaning of *guanxi*. Viewing *guanxi* as a multidimensional construct is a more promising vehicle for capturing the fullness of the concept.

Research on *guanxi* as a multidimensional construct (Lee & Dawes, 2005) used three dimensions (i.e., face, reciprocal favor, and affect) to describe a client-salesperson *guanxi* (business relationship), while Wong et al. (2003) describe *guanxi* (superior–subordinate relationship) as having five dimensions comprised of social activities, financial assistance, giving priority to the *guanxi* person, celebration of special events, and mutual emotional support. These efforts at developing *guanxi* measures featuring informal interactions (behaviors/activities) provide a more concrete way to quantify the *guanxi* concept; however, attempting to capture all the behaviors or activities related to *guanxi* is a near impossible task. We turn to the rule approach as a basis for colleague *guanxi* measurement.

Components of the *guanxi* construct

Fulfillment and maintenance of the unbalanced reciprocal system requires that the interpersonal interaction be operated according to specific rules. The *guanxi* rules that guide the Chinese in their interactions are 'renqing,' 'mianzi/face,' 'reciprocity,' and 'bao/reciprocation' (see Appendix A for a definition of each term). The former two factors are grounded in a theoretical model of norms for interpersonal interactions (Hwang, 1987) which can be used to manipulate the relational magnitude with related partners, while the latter two factors are based on an unbalanced reciprocal system of obligations for interaction (Liu, 1993; Tsang, 1998). We expect if an employee's perception of interactions with a coworker fits these norms and obligations, he/she will have strong *guanxi* intensity with a specific colleague.

We then separate these *guanxi* rules into norms (exterior behaviors) and obligations (interior drives) and propose that renqing and mianzi are classified as exterior behavioral rules which are manageable in that they can be used to build, maintain and strengthen relationships; while reciprocity and bao are inner drives which are generated after an evaluation of the relational obligations following the exterior behaviors. The conceptual model of *guanxi* is presented in Figure 1.
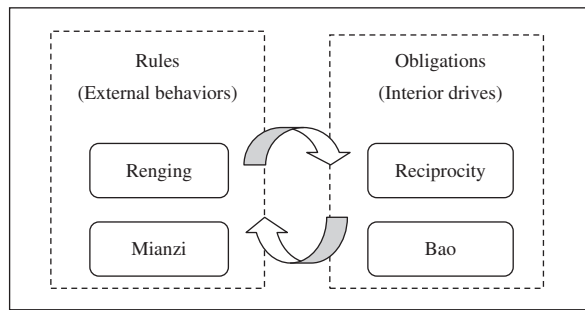
FIGURE 1. CONCEPTUAL MODEL OF GUANXI

Relative to exterior behaviors, Hwang (1987) proposed renging and mianzi as appropriate *guanxi* rules for addressing situations of resource allocation. Renging could be seen as a resource for social exchange (Hwang, 1987), where the renging debt is an unpaid duty to reciprocate (King, 1988) resulting from favor exchange in interpersonal associations. Mianzi is not specific to Chinese, however it is not emphasized in Western society (King, 1988). The Chinese view mianzi as a critical element of *guanxi* and value mianzi of friends more than that of general others (Park & Luo, 2001). The idea of 'saving face' or 'giving face' is restricted to *guanxi* partners (Chen, 1988).

With respect to *guanxi* obligations (interior drives), previous *guanxi* research emphasizes reciprocal obligation when defining *guanxi* (Tsang, 1998; Pearce & Robinson, 2000). *Guanxi* partners are usually obligated to respond to requests for assistance from each other (Tsang, 1998) and favors received can be stored and are expected to be repaid with more favors at the right time (Liu, 1993). We suggest that the obligated reciprocity and bao/reciprocation are generated intrinsically and can be viewed as drives within the reciprocal obligation system.

In terms of reciprocity, members can receive resources from the *guanxi* network and have an obligation to share resources and provide voluntary assistance (Tsang, 1998). The resources in *guanxi* are further defined as gifts or favors exchanged for mutual benefit based on a reciprocal obligation to respond to requests for help (Pearce & Robinson, 2000). Inability or unwillingness to respond to others' requests will impair their *guanxi* maintenance (Tsang, 1998). The other facet of the unbalanced reciprocal system is bao (reciprocation), which is also used to maintain the harmony of *guanxi* (Hwang, 1987). It surfaces when someone perceives that others are being nice, and will seek to repay those individuals with even more favors, rather than merely seek to achieve a balance of mutual interest. If favors are not reciprocated, *guanxi* will deteriorate, making it difficult to maintain social harmony of interpersonal relationships.

Underpinning the unbalanced reciprocal system (see Figure 1), *guanxi* partners bond each other through obligations to exchange favors (Alston, 1989). Any kind of favor receiving will spontaneously accrue a renging debt thus resulting in interior drives of reciprocity and bao. When an individual does something meaningful for the other, the beneficiary is obligated to return more favor to the giver (Hwang, 1987) and provides voluntary assistance to the giver in need. That is, the exterior behaviors of renging and mianzi will initiate the motivations of reciprocity and bao. However, if a renging debt is not reciprocated, the giver will feel disrespected by the beneficiary thus resulting in a loss of face (mianzi) (Park & Luo, 2001). The four critical dimensions of the *guanxi* concept form the underpinning for measuring *guanxi* intensity. We then define *guanxi* as 'a dyadic connection between two individuals, built on interactive experience, imbued with an unbalanced reciprocal system that follows specific rules of renging, mianzi, reciprocity, and bao.'

Guanxi reality in China

The Chinese society of mainland China and Taiwan are similar in holding the same historical culture. The Chinese motto: 'If you don't have a connection, find one. Once you have found the connection, you can depend on it to resolve your problems,' reflecting the Chinese relation orientation. Under this belief, the behavioral model of *guanxi* is similar in mainland China and Taiwan where people consider *guanxi* is manipulated to receive resources. There is a basic interpersonal model of face and favor in Chinese society (Hwang, 1987) that helps to explain the practice of *guanxi*. To strive for social resources controlled by a particular allocator (e.g., money, goods, information, and status), an individual may adopt several strategies to enhance his or her influence over the allocator by visiting, giving gifts, or inviting the other person to banquets as weddings, funerals, or birthday parties in one's family and festivals in one's home village (Huang, 2000).

The interpersonal model can be extended to business and management practices in China. For example, *guanxi* has long been recognized as one of the major factors for success when doing business in China (Yeung & Tung, 1996; Luo, 1997). In both mainland China and Taiwan, business people first strive to build up personal relationships with a potential customer, and once admitted to a *guanxi* relationship, business follows. In contrast to the Chinese way of conducting business, Western business practices tend to begin with transactions; if successful, a personal relationship may follow (Luo, 1997). In addition, Luo (1997) found a direct correlation between a corporation's level of *guanxi* connections and its sales growth in China. Furthermore, Chen and Tjosvold (2006) showed that foreign managers can use personal *guanxi* to increase Chinese employee effectiveness. By balancing personal *guanxi* with organizational performance standards, managers may contribute to alleviate some of the negative consequences of *guanxi* (Chen & Chen, 2004).

While the Chinese in East Asia from Taiwan, mainland China, and Hong Kong are all deeply rooted in traditional Chinese culture, there are differences in political, economic, and values systems (Hofstede & Bond, 1988). The Taiwanese sample used is well suited for developing a colleague *guanxi* scale in that Confucian philosophy is preserved in Taiwan through the education system. The Book of Analects, containing sayings and doings of Confucius by his followers are included in the textbooks of Taiwanese national education systems. Confucius' teachings have encouraged Chinese people to respect their elders and leaders (Huang, 2000), which leads to higher power distance in organizational hierarchies in Taiwan than those in the West (Hofstede, 1980).

In the empirical studies using Taiwanese samples, Farh, Earley and Lin (1997) developed an indigenous measure of organizational citizenship behavior and found two emic dimensions of 'interpersonal harmony' and 'protecting company resources' not present in the Western organizational citizenship behavior scale. Lin and Ho (2009) sampled workers from Taiwan, mainland China, and Hong Kong and found that the level of long-term orientation and emphasis on reciprocity and reciprocation are higher in Taiwan samples than in mainland China or Hong Kong samples.

STUDY 1

Development and validation of the colleague *Guanxi* scale

To develop a scale to measure *guanxi* intensity we reviewed the literature to form an operational definition for each *guanxi* dimension (Churchill, 1979). We then conducted interviews to generate the items of the colleague *guanxi* scale. The Delphi method was used to confirm the veracity of each *guanxi* dimension and its corresponding items. Finally, empirical testing was performed to verify the reliability and validity of the scale for the further empirical test in Study 2.

Item generation

Thirty full-time employees of 10 organizations in Taiwan whose working experience exceeded 3 years were asked to participate in our study. The group was 50% male with an average age 33.8 years. Interviews with each participant were used to generate items for the questionnaire based on the four *guanxi* dimensions. We provided participants with the operational definitions of each dimension (see Appendix A) and asked them to describe two behaviors for each dimension they would do for a close colleague. We obtained from this process a total of 240 statements describing the state of colleague *guanxi*. One of the authors paraphrased each of these behaviors or behavioral intentions into sentences. Three of the authors of this study then examined these sentences. Redundant, ambiguous, and some unsuitable items were eliminated in the initial screening. There were 25 items left, exemplifying the four dimensions of the *guanxi* construct which were distributed as follows: renging (6 items), mianzi (10 items), reciprocity (5 items), and bao (4 items).

The Delphi method (Lindstone & Turoff, 1975; Mitchell, 1992) was used to verify the adequacy of the dimensions and their corresponding items of *guanxi*. Five middle or top managers enrolled in an executive master of business administration program and five people holding a PhD in a management field were invited to form a Delphi panel to rate the 25 items. Panel members were given a structured questionnaire and were instructed to rate the items based on the relatedness of each item to a specific dimension (1 = not at all, 7 = completely agree). The mean scores and deviations for all items on each of the dimensions were calculated.

The Delphi procedure consisted of two rounds, which took place over a 2 month period (Holden & Wedman, 1993). Judges rated the items on two criteria; (a) consistency (standard deviation is less than 0.5) and (b) importance (mean is more than 5.0). The means and quartile deviations of items from the first round were counted and presented in the second round questionnaire. There were nine items that failed to reach consensus during the first round. Results from the first round were shared with second round participants before the second round. These discussions resulted in eight items that did not reach the convergence criteria of a mean score of <5.0 and a quartile deviation of more than 1.0 in the second round. The remaining 17 items were therefore confirmed for further analyses. These items are shown in Appendix B.

Data collection (first data set)

Judgmental sampling was used to obtain a sample size suitable for the primary stage of an exploratory study when researchers want to select a specific sample (Cooper & Schindler, 2003). This type of sampling technique is also known as purposive sampling and authoritative sampling (Castillo, 2009). Judgmental sampling is a selection process which involves a subjective selection of potential respondents based on researchers' knowledge and professional judgment about some appropriate characteristics required for the sample members (Zikmund, 2003; Castillo, 2009). The sample was not restricted to any specific industry or institution due to the pervasive nature of the *guanxi* concept.

After receiving the agreement of 20 companies to participate in this study, research assistants delivered the questionnaires to the organizations. The presence of researchers can facilitate data collection (Chen & Tjosvold, 2006); accordingly, a member of the research team visited the participating companies to explain the purpose of the study. They also collected the completed survey to reinforce that responses would be kept confidential. The sampled companies consisted of various industries, including banking, insurance, real estate, automobile, restaurant/hotel, hospital, electronics, and food. A total of 600 were distributed and 535 were returned, for a response rate of 89.17%. Unqualified samples (e.g., data with missing values) were removed, leaving 416 valid data sets for a useable response rate of 69.33%.

In the final sample there were 203 (48.80%) males and 213 (51.20%) females, of which 74.28% were between the ages of 20 and 40 years. The average educational level was a bachelor's degree, for 290 (69.71%) of the total sample. The majority of the participants worked in the service industry (55.77%) followed by manufacturing (17.55%), while 303 participants were from private companies (72.84%). Three hundred and ten respondents (74.52%) were junior workers in their organizations, with an average seniority of 5.90 years.

Item purification

Item analysis

We used the internal consistency coefficient and critical ratio to check item quality. For all items of colleague *guanxi* the response format was from 1, 'strongly disagree,' to 7, 'strongly agree.' The sample was divided into high- and low-score groups based on the total *guanxi* scale score. The lowest 25% of those sampled became the low-score group, and was coded '1,' while the highest 25% of those sampled were selected as the high-score group, and was coded '3,' and other responses were coded '2'. *T*-tests were then used to check the differences of each item scores between the high-score and low-score groups. The result indicates that the corrected item-total correlations were between 0.39 and 0.86, and all exceeded 0.35, while the critical ratios (*t*-values) were between 8.68 and 20.67. The *t*-values of all the items were statistically significant. In sum, the result shows that the scale fits the criteria of the item analysis.

Reliability analysis

The internal consistency of each *guanxi* dimension was estimated with coefficient alpha, which were calculated separately for the items that comprises the four *guanxi* factors. A large coefficient α (Cronbach's α > 0.70 for the exploratory measure; Nunnally, 1978) provides an indication of strong item covariance or homogeneity and that the domain of a concept has been adequately captured by the selected items (Churchill, 1979: 68). The Cronbach's α for renging, mianzi, reciprocity, and bao was 0.81, 0.88, 0.93, and 0.85, respectively (see Table 1). The results indicate that our colleague *guanxi* scale is reliable in measuring the *guanxi* factors.

Confirmatory factor analysis among horizontal colleague guanxi factors

To further validate the construct domain of colleague *guanxi*, we conducted confirmatory factor analysis to assess whether each item is loaded on its corresponding *guanxi* dimensions for two reasons. First, we developed the colleague *guanxi* scale on the basis of theoretical *guanxi* rules (e.g., Hwang, 1987; Liu, 1993; Tsang, 1998; Chen & Chen, 2004) to form the structure model of *guanxi* construct; second, the generated items of each dimension had been confirmed by the Delphi method. Therefore, it was necessary to examine if it was appropriately organized.

Using AMOS's maximum likelihood procedure, three items were eliminated because the factor loading was < 5.0 (the loading of BAO4 was 0.41) or the items' residuals are highly correlated to items of bao (i.e., REC5 and REC6). This resulted in a 14-item *guanxi* measure with 3 items on renging, 4 items on mianzi, 4 items on reciprocity, and 3 items on bao. A re-examination of the items on each factor confirmed that all four factors have a clear conceptual meaning. The results of factor loadings and fit indexes are detailed in Table 1, demonstrating that the four-factor model fitted the data well ($\chi^2 = 182.26$, $df = 71$; RMSEA = 0.063, GFI = 0.94; CFI = 0.98) and reached the convergent validity for significant factor loadings ($\gamma > 0.50$).

To test discriminant validity among the four factors of horizontal colleague guanxi scale (named HCG hereafter), we then compared the hypothesized model with seven alternative models (six three-factor models and a one-factor model). Comparisons of this four-factor model with three- and one-factor

TABLE 1. STUDY 1 –RELIABILITY AND CFA OF COLLEAGUE *GUANXI* SCALE

Item	Factor loading	Residual	Cronbach' α
REN1	0.65	1.37	0.81
REN2	0.86	0.89	
REN3	0.75	1.17	
MIN1	0.53	1.03	0.89
MIN2	0.86	0.68	
MIN3	0.90	0.61	
MIN4	0.93	0.53	
REC1	0.92	0.52	0.94
REC2	0.94	0.41	
REC3	0.91	0.57	
REC4	0.84	0.74	
BAO1	0.92	0.53	0.94
BAO2	0.95	0.40	
BAO3	0.86	0.65	

Notes. $\chi^2 = 182.261$, $df = 71$; RMSEA = 0.063, GFI = 0.94; CFI = 0.98; IFI = 0.98.
BAO = reciprocation; CFA = confirmatory factor analysis; MIN = mianzi; REC = reciprocity; REN = renging.

TABLE 2. STUDY 1 – DISCRIMINANT VALIDITY ANALYSIS RESULTS

Measurement Model	χ^2	df	$^\Delta\chi^2$	GFI	CFI	RMSEA
Discriminant analyses among four factors						
1. Four-factor baseline model	182.26	71		0.94	0.98	0.063
(Second-order factor model)	184.23	73		0.94	0.98	0.063
2. Three-factor model (REN = MIN)	432.92	74	250.66[***]	0.84	0.93	0.111
3. Three-factor model (REN = REC)	385.63	74	203.37[***]	0.87	0.94	0.103
4. Three-factor model (REN = BAO)	514.25	74	331.99[***]	0.82	0.91	0.123
5. Three-factor model (MIN = REC)	779.00	74	596.74[***]	0.75	0.85	0.155
6. Three-factor model (MIN = BAO)	958.01	74	775.75[***]	0.72	0.82	0.174
7. Three-factor model (REC = BAO)	514.25	74	331.99[***]	0.82	0.91	0.123
8. One-factor model	1551.69	77	1369.43[***]	0.61	0.69	0.220
Discriminant analyses with SIG						
9. Baseline Five-factor model	408.02	172		0.91	0.97	0.059
10. Four-factor model (REN = SIG)	674.43	176	266.41[***]	0.85	0.93	0.085
11. Four-factor model (MIN = SIG)	999.26	176	591.25[***]	0.76	0.88	0.109
12. Four-factor model (REC = SIG)	967.68	176	559.66[***]	0.78	0.89	0.107
13. Four-factor model (BAO = SIG)	1184.13	176	776.12[***]	0.73	0.86	0.120

Notes. BAO = bao; MIN = mianzi; REC = reciprocity; REN = renging; SIG = social interaction *guanxi*.
$n = 416$; ***$p < .001$.

models, as shown in Table 2, indicate that none of the dimensions were redundant. The change of χ^2 was significant, indicating a worse fit than the four-factor model. The competing one-factor measurement model did not fit our data ($\chi^2 = 1551.69$, $df = 76$; RMSEA = 0.220, GFI = 0.61; CFI = 0.69).

Discriminant validity with social interaction guanxi (SIG)
We used the subordinate–supervisor *guanxi* scale proposed in Law et al. (2000) as a comparative scale. The subordinate–supervisor *guanxi* scale is directed to supervisor-subordinate dyadic relationship, we,

therefore, rephrased the items of the subordinate–supervisor *guanxi* scale to measure the frequency of social interaction between two colleagues (SIG). To test the discriminant validity between the HCG and SIG, we estimated the hypothesized five-factor model (four factors for *guanxi* and one for SIG). The SIG scale stresses the informal interactions, while our HCG scale focuses on the normative behaviors and obligations of *guanxi*.

We then compared this hypothesized model with three alternative models. These alternative models tested whether SIG was different from any of the four *guanxi* factors. As shown in Table 2, significant χ^2 difference tests showed that the five-factor fits better than all four alternative four-factor models, in which SIG is considered the same as one part of our *guanxi* model. The correlations between the four *guanxi* factors of renging, mianzi, reciprocity, and bao with SIG are 0.65, 0.58, 0.61 and 0.47, respectively. These comparison tests suggest that the discriminant validity between the four dimensions of HCG and SIG is due to the traditional Chinese rules.

Study 1 purified our *guanxi* measure and confirmed the reliability, convergent and discriminant validity of the HCG scale. The second study was designed to cross-validate the scale on another sample and show the nomological validity of the scale by embedding it in a model of similarity (similar attitudes and values), cognition (cognitive trust), and affection (affective trust).

STUDY 2

Cross-validation of the *guanxi* scale

The proposed structural relationships between *guanxi* and related constructs that form a nomological network are shown in Figure 2. According to social attraction theory, similarity in attitudes, values, and beliefs may facilitate interpersonal attractions (Newcomb, 1956). The similarity-attraction paradigm suggests that individuals are more attracted to, and have more positive attitudes about similar others (Byrne, 1971). Research suggests that similarity in attitude has more impact on interpersonal attraction than similarity in personality, race, or demography (Glaman, Jones, & Rozelle, 1996). Moreover, value congruence may enhance interpersonal interactions in the workplace by increasing the predictability of the behaviors of others (Adkins, Ravlin, & Meglino, 1996). Thus, it is argued that similarity is the source of interpersonal attraction (Williams & O'Reilly, 1998), and that similarity in attitudes or values increases interpersonal attraction and affection (Byrne, Clore, & Worchel, 1966; Riordan, 2000). We proposed that the similarity in attitudes and values cognized by an individual (i.e., subjective fit) helps to generate interpersonal attraction among colleagues and thus facilitates their interactions and associations for *guanxi* development.

Prior research has found that *guanxi* generates a positive effect on trust (Farh et al., 1998; Wong, Ngo, & Wong, 2003a; Lee & Dawes, 2005). In order to increase the precision of our structural model, we specified that *guanxi* will influence an organizational member's affective trust toward coworkers since affections develop after interacting over time (McAllister, 1995). When people are successful in establishing higher *guanxi* intensity with another, their attitude toward that person will be more positive (e.g., affective trust). The partner with strong *guanxi* will be considered as an insider and will receive more trust. We hypothesized that *guanxi* have a direct effect on affective trust in a colleague.

We also tested a structural path from cognitive trust to affective trust based on findings that high cognitive trust leads to strong affective trust of a colleague (McAllister, 1995). Cognitive trust reflects one's competencies and a sense of responsibility (Cook & Wall, 1980; McAllister, 1995) instead of assessing the interpersonal relationship. An organizational member will develop a basic cognition of a coworker's working ability and reliability after working with that person over time. In general, organizational members are more willing to cooperate with a colleague who is recognized as reliable
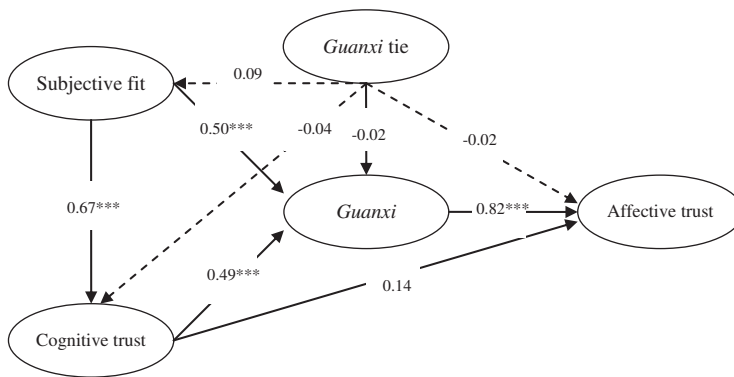
FIGURE 2. THE STRUCTURAL MODEL OF A PROPOSED NOMOLOGICAL NETWORK FOR *GUANXI*.
NOTES. $*p < .05$; $**p < .01$; $***p < .001$; $\chi^2 = 233.17$, DF = 81; RMSEA = 0.081, GFI = 0.90; CFI = 0.96

for instrumental motivation of *guanxi* (Lee & Dawes, 2005). Yang, Van de Vliert, Shi and Huang (2008) also found that except for friendship, the disputer's competence will influence employees' minds about how to handle dispute between their colleagues. We thus argued that cognitive trust is a basic consideration before taking further action of building colleague *guanxi*.

Guanxi tie is argued to have a positive influence on trust (Farh et al., 1998); however, the effect of *guanxi* ties in the development of interpersonal relationships is also doubted by other scholars (Jacobs, 1979; Law et al., 2000; Dunfee & Warren, 2001). We added the *guanxi* ties as a control variable in the proposed nomological network of *guanxi* shown in Figure 2.

Method

Procedure (second data set)

Purified items (see Study 1) with other established measures were administered to participants from ten organizations in Taiwan. Under the judgmental sampling method participation of the 10 organizations was facilitated by executive master of business administration students who voluntarily participated in this study. After following up with these organizational contacts, surveys were administered to 300 employees recruited by our contacts in the 10 organizations. Research assistants delivered 30 questionnaires to each of the 10 participating organizations. Respondents were asked to select one of their colleagues in the same position as the object person for evaluation. To reduce potential concern for being involved in evaluating others and being evaluated themselves, participants were told that their responses would be confidential. They were also informed that their supervisors supported their participation in the study. After the explanation of the process, respondents were allotted ~30 min to finish the questionnaires. Completed questionnaires were immediately collected by the assistants.

A total of 294 surveys were received, resulting in a completion rate of 98%. This high response rate was possibly because the questionnaires were collected on the spot instead of through mailing. Ten questionnaires were eliminated due to unusable responses resulting in 284 valid questionnaires. One hundred twenty-five respondents were from the services industry (44.01%), 80 respondents were from manufacturing (28.17%), and 60 respondents were from public-owned organizations (21.27%).

Participants

The sample was near gender balanced (47.62% were male), 197 respondents were between 20 and 40 years of age (63.37%), 194 respondents had a bachelor's degree (68.31%) and 51 respondents had

either a master's degree or a doctorate (17.96%). Two hundred and four respondents were junior workers in their organizations (71.83%), with an average tenure of 7.06 years.

Measures

The questionnaire included (a) the 14-item *guanxi* measure developed in Study 1, (b) the 6-item scale measuring cognitive trust and affective trust translated by Chen (2000), Cronbach's α = 0.91 and 0.89, respectively, (c) the 4-item measure of similarity in attitudes and values between colleagues cognized by respondents from the subjective fit scale (Chen, 2000, Cronbach's α = 0.80), (d) *guanxi* ties as a objective variable to show the relational bases between two colleagues, and (e) a 3-item measure of an individual's propensity to trust referring to interpersonal trust scale (Rotter, 1967) as a common factor.

Cognitive trust was measured by responses to the following items: (a) I have confidence in his/her work quality; (b) His/her attitude toward work is serious; (c) His/her working ability is undoubted. Affective trust was measured by: (a) I am willing to share my thoughts, feelings, and hopes with him/her; (b) When I encounter problems in my job, I am willing to tell him/her and I also know that he/she is willing to listen to me; (c) I know he/she will give me constructive suggestions and show concern for me when I share problems in my job with him/her. The items on the scale of subjective fit were: (a) Our values are similar; (b) We see things from similar perspective; (c) We have common interests; (d) We have the same hobbies. For all items above the response format was from 1, 'strongly disagree,' to 7, 'strongly agree.'

To address the common method variance (CMV), we examined an objective indicator named *guanxi* ties and a common factor called trust propensity. The examples of *guanxi* ties were family/relative, same last name, same natal origin, former classmate, former colleague, former teacher/student, former boss/subordinate, and former neighbor (Farh et al., 1998). Situations with one or more of these eight *guanxi* ties in the respondent's relational bases with the object were coded '1' and others were coded '0'. The items of trust propensity scale were: (a) In dealing with strangers one is better off to be cautious until they have provided evidence that they are trustworthy; (b) In a competitive environment one is better off to be cautious because other people may use you for their sake; (c) It is better to believe that people is selfish in nature no matter what they say. The response format of trust propensity was from 1, 'strongly disagree,' to 7, 'strongly agree.'

Measurement model

To cross-validate the factor structure of the *guanxi* scale, we did a confirmatory factor analysis of the 14 *guanxi* items with the three cognitive trust items, the three affective trust items, and the four subjective fit items using AMOS 7.0. The overall *guanxi* construct is specified as the underlying factor formed by its four dimensions. As in Study 1, results generally supported the discriminant validity of the *guanxi* measure. Overall χ^2 of the model was 501.15 with 175 degrees of freedom. The model showed a comparative fit index of 0.94, a goodness of fit index of 0.86, and a root mean square error of approximation of 0.079. These goodness-of-fit indices support the notion that the measurement model fit reaches an acceptable level.

Reliability analysis

The internal consistency of each of the dimensions was estimated with coefficient α. Coefficient α's were calculated separately for the four *guanxi* factors and related constructs. In Table 3, The Cronbach's α for each *guanxi* dimension was between 0.82 and 0.90; for subjective fit was 0.93; for cognitive trust and affective trust were 0.93 and 0.95, respectively; and for trust propensity was 0.96.

TABLE 3. MEASUREMENT MODEL ANALYSIS

Variables	Items	Loadings	t-value	ε	Mean	SD	Cronbach's α
Renging	V1	0.78		0.67	3.92	1.80	0.82
	V2	0.87	12.05	0.58	4.60	1.70	
	V3	0.72	10.46	0.70	3.58	1.77	
Mianzi	V4	0.70		0.73	5.53	1.21	0.88
	V5	0.75	7.53	0.74	5.47	1.18	
	V6	0.87	7.51	0.70	5.25	1.43	
	V7	0.96	6.78	0.42	5.08	1.59	
Reciprocity	V8	0.91		0.57	5.30	1.38	0.86
	V9	0.95	27.81	0.42	5.46	1.28	
	V10	0.88	23.35	0.64	5.30	1.38	
	V11	0.85	21.08	0.70	5.21	1.33	
Bao	V12	0.92		0.44	5.61	1.15	0.90
	V13	0.94	24.88	0.41	5.55	1.17	
	V14	0.75	16.46	0.84	5.33	1.29	
Subjective fit	V15	0.96		0.44	4.39	1.49	0.96
	V16	0.95	32.48	0.46	4.35	1.47	
	V17	0.75	17.18	0.96	3.87	1.44	
	V18	0.71	15.51	1.03	3.81	1.45	
Cognitive trust	V19	0.92		0.53	5.35	1.40	0.93
	V20	0.89	23.79	0.62	5.36	1.42	
	V21	0.92	26.09	0.57	5.02	1.49	
Affective trust	V22	0.92		0.60	5.02	1.49	0.94
	V23	0.95	29.38	0.48	5.03	1.54	
	V24	0.93	27.94	0.53	5.04	1.49	
Propensity to trust	V25	0.91		0.60	5.23	1.42	0.96
	V26	0.96	29.33	0.43	5.32	1.45	
	V27	0.97	30.55	0.38	5.29	1.49	

Note. $\chi^2 = 501.15$, $df = 175$; RMSEA = 0.079, GFI = 0.86; CFI = 0.94.

Validity analysis

There were three categories of validity test completed on the data: (a) convergent validity, (b) discriminate validity, and (c) nomological validity. Hair, Anderson, Tatham and Black (1998) suggest three criteria to check for convergent validity. The criteria are (a) all the standardized item loadings must exceed 0.70 and reach statistical significance, (b) composite reliability should exceed 0.60, and (c) average variance extracted should exceed 0.50. The results shown in Table 3 and Table 4 indicate most of the standardized loadings of items exceeded 0.70 and were statistically significant, the composite reliability of all factors exceeded 0.60, and the average variance extracted exceeded 0.50. The results support the convergent validity of our colleague *guanxi* measure. In Table 4, the correlation coefficients between a construct and other constructs were generally less than the square root of its average variance extracted shown in boldface diagonal values, indicating each construct is separate from other constructs (Fornell & Larcker, 1981). The results supported the discriminant validity of these measures and also showed that the colleague *guanxi* is a construct distinct from subjective fit, cognitive trust, and affective trust.

Full model analysis

After confirming the reliability and validity of the measurement model, we examined the nomological network of the colleague *guanxi* concept by combining the 14 *guanxi* items into four indicators

	Variables	1	2	3	4	5	6	7	8	CR	AVE
1	Renging	**0.71**								0.74	0.50
2	Face	0.51	**0.72**							0.81	0.51
3	Reciprocity	0.65	0.46	**0.76**						0.85	0.58
4	Bao	0.52	0.46	0.63	**0.75**					0.80	0.57
5	Subjective fit	0.57	0.71	0.54	0.45	**0.72**				0.80	0.51
6	Cognitive trust	0.62	0.68	0.56	0.53	0.66	**0.77**			0.81	0.59
7	Affective trust	0.72	0.71	0.67	0.53	0.71	0.73	**0.79**		0.83	0.62
8	Trust propensity	0.58	0.72	0.61	0.56	0.73	0.74	0.72	**0.81**	0.85	0.66

Note. The boldface diagonal values are the square roots of AVE of each variable.

by averaging. We then utilized these four indicators to demonstrate the colleague *guanxi* intensity for a full model analysis.

Figure 2 shows the path coefficient estimates for the nomological model of *guanxi*, with acceptable goodness of fit ($\chi^2 = 233.17$, $df = 81$; RMSEA = 0.081, GFI = 0.90; CFI = 0.96). The hypothesized paths were significant and in the predicted direction. The colleague *guanxi* was positively related to the degree of subjective fit ($\beta_{31} = 0.50^{***}$, $t = 12.89$). Two parties with more similar attitudes and interests easily build and maintain higher *guanxi* intensity. This finding corresponds to the similarity-attraction paradigm, where the degree of interpersonal attraction increases when the attitudes and values of two parties are similar (Byrne, Clore, & Worchel, 1966). Moreover, the influence of cognitive trust on perceived *guanxi* was confirmed ($\beta_{32} = 0.49^{***}$, $t = 7.50$). A person holding cognitive trust in a specific colleague by recognizing a colleague's working ability and reliability will be more willing to interact with that colleague for the instrumental motivation of *guanxi* (Lee & Dawes, 2005).

In terms of affective trust in the colleague relationships, cognitive trust is positively related to affective trust, but did not reach statistical significance ($\beta_{42} = 0.14$, $t = 1.69$, $0.10 > p > .05$). Our results demonstrate however, that colleague *guanxi* exerts a positive influence on affective trust ($\beta_{31} = 0.82^{***}$, $t = 8.36$). When *guanxi* rules are well executed between colleagues for a period of time, they will be more willing to share their problems and expect positive responses. Furthermore, we can say that the effect of *guanxi* on affective trust is stronger than that of cognitive trust. This result sheds light on the role of *guanxi* in interpersonal trust. That is, for Chinese colleague relationships, the interpersonal affections are probably generated through interactions in *guanxi*-style rather than merely cognition of someone's competence.

Finally, we also tested an alternative model of viewing the colleague *guanxi* as an outcome variable by reversing the path between *guanxi* and affective trust. The alternative model ($\chi^2 = 298.03$, $df = 81$; RMSEA = 0.097, GFI = 0.88; CFI = 0.94) did not fit the data as well as the proposed baseline model.

Common method variance

Our four major variables (i.e., colleague *guanxi*, subjective fit, cognitive trust, and affective trust) were collected from the same source, which may result in inflated correlations between variables. To address the CMV among these variables, we conducted Harman's one factor test suggested by Podsakoff and Organ (1986) and confirmed that the one-factor model did not fit the data well ($\chi^2 = 2561.31$, $df = 248$; RMSEA = 0.182, GFI = 0.52; CFI = 0.67).
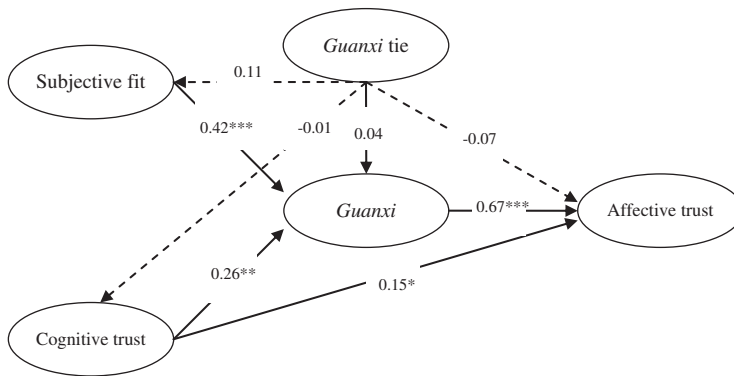
FIGURE 3. THE STRUCTURAL MODEL OF A PROPOSED NOMOLOGICAL NETWORK FOR *GUANXI* UNDER THE EFFECT OF COMMON FACTOR.
NOTES. *$p < .05$; **$p < .01$; ***$p < .001$; $\chi^2 = 264.06$, DF = 112; RMSEA = 0.069, GFI = 0.91; CFI = 0.97

To further control this bias we incorporated an unmeasured and objective indicator into the hypothesized model (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The *guanxi* ties here was viewed as a control variable by placing it as an antecedent to all other variables. The results showed that all of the paths from *guanxi* ties to other variables were not significant (all $p > .10$), which implies that the prior relational base is not a predictor for the interpersonal trust and *guanxi* intensity. *Guanxi* ties are infrequent among colleagues in our sample corresponding to the opinion of Chou (2002) and have limited influence in work relationships (Jacobs, 1979; Liu, 1993; Cheng, Farh, & Chang, 2002).

Finally, we further test the nomological network of *guanxi* by considering a common factor to partial out the method variance. We took the latent variable of trust propensity as a predictor to all items of latent variables without changing the hypothesized relationships of other latent variables. The results indicated that the trust propensity was significantly correlated to all of the observed variables (standardized coefficients were from 0.51 to 0.79; $p < .001$), which means the variable of trust propensity can be viewed as a common factor to all the items. After controlling the possible effect of common method variance to our model, the hypothesized relationships between the latent variables remain the same and the deflation of path coefficients seems more reasonable and realistic (see Figure 2 and Figure 3 for comparison).

DISCUSSION

The current findings add important conceptual and empirical insights into the literature on *guanxi*. First, we propose the *guanxi* model based on critical rules of Chinese interpersonal interactions and confirmed the reliability and validity of the horizontal colleague *guanxi* scale (HCG) in Study 1. Second, a result of the intense colleague *guanxi* in this study is the enhanced effectiveness of affective trust between two colleagues and its role in mediating the cognition (subjective fit and cognitive trust) to affection (affective trust).

It is important to note that after controlling for the effects of a prior relational base (i.e., *guanxi* ties) and a common factor (i.e., trust propensity) the proposed baseline model is still supported by our results. For the Chinese employees, *guanxi* therefore is a critical variable for predicting an individual's attitudes toward colleagues. In sum, we expand the theory about *guanxi* by explaining the mechanisms that stimulate the formation of *guanxi* and make *guanxi* influential in horizontal colleague relationships in an organization.

Theoretical and practical implications

The *guanxi* scale developed in this study synthesizes current *guanxi* definitions and measurements of *guanxi*. The scale for measuring colleague *guanxi* presented in this study is oriented toward Chinese rules and obligations (i.e., renging, face, reciprocity, and bao) rather than affections, which distinguishes it from the Western affective approach (e.g., love, familiarity, and affections) or the attitudinal approach (e.g., like, satisfaction, and trust). Therefore, the colleague *guanxi* scale manifests the unique characteristics of the *guanxi* concept.

Research on Chinese *guanxi* has often focused on instrumental benefits and obligations rather than true affective expressions or emotions. Our findings supplement the existing views of the implicit and complex nature of *guanxi*. We construct a model to present the mixed features (instrumental and expressive) of *guanxi* by showing that *guanxi* can bridge the interpersonal interaction from the state of cognitive evaluation to that of affective relationship.

In this study we treat *guanxi* as a neutral term (Chen & Chen, 2004) used to evaluate the intensity of *guanxi* rules performed in a horizontal colleague relationship. We suggest future research to identify the Chinese affections to see whether they are involved in *guanxi* rules or are apart from the *guanxi* concept, for example, how to identify a gift-giving or a face-saving behavior is out of a true sincerity or instrumental purposes. Further empirical studies may also try to apply the colleague *guanxi* scale in managerial contexts. For instance, two types of interpersonal exchanges exist, economic, and social (King, 1988), and this study provides useful perspectives on such social exchanges.

In terms of practical implications, the most notable difference in managerial practices between Western cultures and Chinese/Asian cultures is that the former stresses formal contracts and process while the latter stresses personal *guanxi* (Davies, Leung, Luk, & Wong, 1995). This culture difference results in the mix of formal work relationship with social ones by Chinese employees. Our study explicates the nature of the *guanxi* dynamics of horizontal colleague relationships in an organization and advances the understanding of this specific emic term by Westerners. For the well-developed colleague *guanxi*, the formal and social exchanges are pervaded with *guanxi* rules which coexist and co-act to establish the affective trust between two colleagues.

Finally, King (1988) noted that according to the structure of differential treatment, which is part of the cultural logic of Chinese ethical relationships, the Chinese feel obliged to help relatives and friends. This study adds to that notion by explaining why private affairs override public ones, or why the morality of returning favors outweighs objective morality, owing to a refusal to assist relatives and friends being perceived as a type of 'ruthlessness.' In addition to morality issues, *guanxi* may be helpful for individual career development, especially in the Chinese society. However, with the internal management of organizations, the negative effects of *guanxi* deserve further consideration.

Generalization of the horizontal colleague *guanxi* scale

The horizontal colleague *guanxi* scale developed in this study is based on Chinese *guanxi* rules of interpersonal interaction. We believe this *guanxi* scale is an emic construct to be culture-specific and unique to the Chinese contexts. Owning to the lack of comparable values or cultural background, the implied meaning of these items might be difficult to accept by Westerners. That means if researchers want to discuss the effects of *guanxi* in an organization, the colleague scale is more suitable in Chinese contexts where people endorse common cultural values or beliefs.

However, there is no emic term presented in the items of our colleague *guanxi* scale. If researchers want to approach the cross-cultural research, this *guanxi* scale may also be tested in an organization outside the China where there are employees holding different cultural values. As Farh, Earley and Lin (1997) presumed that people exposed to a common environmental setting (e.g., being raised in mainland China or Taiwan) develop a shared understanding of the world around them, share

specific values, and can be distinguished from others who do not share these values. Thus, the term 'cross-cultural' has been used to depict differences in individuals' values about cultural dimensions, regardless of whether they are co-acting or have a common nationality (Farh, Earley, & Lin, 1997).

Limitations

Several limitations of the current research are noteworthy. First, we obtained the data at one point in time; thus the cross-sectional nature limits causal assertions. Longitudinal study may address how the relationships of *guanxi* are increased by cognitive processes and lead to the attitudes toward a colleague over time.

Second, the data for this study came from Taiwan local firms, which may have special characteristics that influenced the results. Further research should consider conducting studies in foreign-owned companies in order to ensure the generalizability of the research findings in this study. It might also be beneficial to study cross-cultural influence on the effects of *guanxi* on work outcomes. *Guanxi* itself is a very general phenomenon, not limited to Taiwan. We speculate that similar effects may also exist in employees who hold similar cultural values, especially in collectivist cultures based on Confucianism that values personal relationship.

Finally, surveys with variables that come from the same source are said to be vulnerable to the problem of CMV. In order to deal with CMV concern, first, we used an objective indicator to show that a scarcity of former ties leads to the insignificant relationships between *guanxi* ties and other related variables. Second, we added a common factor into our model, called trust propensity, and were able to empirically show that the variable of propensity to trust others is significantly related to all of the observed variables. Further, that when partialling out the method variance, the proposed relationships of the hypothesized model remain stable (Podsakoff et al., 2003). Third, there are two *guanxi* factors (i.e., renging and mianzi) based on actual behaviors and one variable evaluated by an actual situation (i.e., *guanxi* ties), that is, the variables rated by the participants are not all conceptual; rather, they have an objective feature. Fourth, we also tested alternate models including a one-factor model and a path reversed model to confirm the proposed model structure. Last, the convergent and discriminant validity of the colleague *guanxi* scale was confirmed by two studies. As presented earlier, the multifactor structures of the data from both the first and the second studies seemed to refute the existence of a single, dominant factor due to common method variance. Therefore, the results may not be seriously affected by CMV.

CONCLUSION

This study develops a scale for measuring the intensity of horizontal colleague *guanxi* reflective of Chinese cultural characteristics. We point out a prospective way to operationalize this construct by examining the exterior behaviors (norms of renging and mianzi) and the interior drives (obligations of reciprocity and bao) in dyadic relationships. The *guanxi* concept was tested in Chinese organizational settings, rather than developing a concept specific to the organizational environment, and offer evidence that describing *guanxi* by rules/obligations is a suitable way to measure colleague *guanxi* intensity. The items for the *guanxi* intensity scale do not involve moral content (right or wrong) or attitudes (like or dislike), but are neutral descriptions of interactions between two parties according to *guanxi* rules. The empirical results verify that *guanxi* is a multidimensional construct that exists in Chinese working environments, that follows specific rules for building and maintaining *guanxi*.

ACKNOWLEDGEMENTS

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APPENDIX A: OPERATIONAL DEFINITIONS OF *GUANXI* DIMENSIONS

Dimensions	Operational definitions	Reference
Renging	An individual values the favors receiving from his/her partner and is indebted to returning the favors	Hwang (1987), King (1988), Lee and Dawes (2005)
Mianzi	An individual respects the feelings of his/her partners' and avoids embarrassing them	Chen (1988), Lee and Dawes (2005), Park and Luo (2001)
Reciprocity	An individual must strive to fulfill the needs of his/her partners and cannot refuse to give assistance when his/her partner is in need	Pearce and Robinson (2000), Tsang (1998)
Bao	If an individual receives favors from his/her partner, that individual must attempt to repay and increase the value of the favor. If the individual is unable to reciprocate immediately, he/she must keep it in mind and reciprocate when able to do so	Liu (1993)

Note. Guanxi is pronounced 'guan Shee'; renging is pronounced 'run ching'; mianzi is pronounced 'mee-in-zz', bao is rhymes with 'how' as the 'bow' of a boat.

APPENDIX B: ITEMS IN THE HORIZONTAL COLLEAGUE *GUANXI* SCALE

Renging

1. Sometimes he/she gives me small gifts.
2. He/she frequently takes care of me, such as reminding me about details related to my job.
3. He/she has made considerable efforts such as using their personal knowledge, cash, or connections to tide me over.

Mianzi

4. I never embarrass him/her in public.
5. I respect his/her feelings.
6. He/she never embarrasses me in public.
7. He/she does not respect my feelings.*

Reciprocity

8. When he/she is in trouble, I will exert myself to help.
9. I will voluntarily give him/her a help when he/she is in need.
10. I am willing to use my personal networks to help him/her.
11. I will exert myself to assist him/her in completing jobs that are not mine.
12. He/she will exert himself to assist me in completing work tasks for which he/she is not responsible. X
13. I feel it is hard to refuse his/her request. X

Bao

14. If I receive favors from him/her, I don't always pay them back.*
15. If I receive favors from him/her, I make certain to return them in future.
16. I believe that I must attempt to repay and increase the value of favors even when I am unable to do so immediately.
17. I expect him/her to do me a favor in return for favors I have done for him/her. X

Note: *reverse item; X deleted from the scale finally.