Adding Relational Harmony To Teams: A Subgroups Perspective

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UNIVERSITY OF MIAMI

A dissertation submitted in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy

ADDING RELATIONAL HARMONY TO TEAMS: A SUBGROUPS PERSPECTIVE

Yonghong Liu

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The increasing diversity of the workforce and a greater emphasis on teamwork in today’s organizations necessitate a better understanding of how to ensure unity in heterogeneous work teams. Relational harmony (defined as the coexistence of two or more entities in a state of mutual acceptance and benevolence) is, therefore, a critical end state that diverse teams should seek to achieve. This dissertation aims to develop the construct of relational harmony in organizational research in general and to apply this concept to team research in particular.

Research has suggested that team members may be divided into two or more subgroups based on the alignment of multiple individual attributes, or namely, group faultlines (Lau & Murnighan, 1998). The existence of subgroups in work teams (Carton & Cummings, 2012) poses challenges to ensuring team relational harmony (Hornsey & Hogg, 2000a).

In this dissertation, I focus on the effects of resource-based subgroups, particularly subgroups based upon members’ differences in status (as a social resource; Foa, 1971). Specifically, I investigate how configurational properties (including the number of subgroups and the variation of subgroups in size) affect harmonious interpersonal relationships among team members, as well as the extent to which harmony
impacts team performance. A contingency approach to leadership is also used to provide actionable knowledge that informs managers of how to deal with resource-based subgroups in teams so as to improve relational harmony and team performance.

Since a measure of harmony in organizational settings is not currently available, I first develop a scale to assess the state of interpersonal relational harmony. Scale development follows a deductive approach, including a quantitative assessment of initial items’ content adequacy based on 18 subject matter experts (study 1), an exploratory factor analysis of surveys obtained from 137 employees from a variety of industries (study 2), and a confirmatory factor analysis of survey data obtained from 122 employees who worked in teams in a manufacturing company (study 3).

Hypotheses are then tested on complete information from 320 employees and their leaders in 46 teams from 3 companies in China (study 4). Although these companies vary in their industries and businesses (financial services, hospitality, and manufacturing), the selection of the teams employed identical criteria and procedures.

The findings demonstrate that there appears to be an inverted U-shaped curvilinear relationship between the number of resource-based subgroups and team relational harmony such that teams with a moderately large number of resource-based subgroups have the highest relational harmony. This curvilinear effect is moderated by leaders’ interaction facilitation behavior in such a way that the inverted U-shape only appears when leader interaction facilitation is low. When leaders demonstrate a high level of interaction facilitation behavior, teams with more resource-based subgroups display higher relational harmony. Moreover, although the current results do not provide support for a positive relationship between balance of resource-based subgroups and team
relational harmony, leader interaction facilitation behavior changes the nature of the relationship such that the relationship turns from positive to negative when leader interaction facilitation behavior varies from low to high. Team relational harmony, in turn, translates the impact of resource-based subgroup configurational properties and leadership interaction facilitation behavior to team performance. Taken together, these findings show the importance of properly configuring teams as well as enacting suitable leadership behaviors in managing subgroups and building high-performing teams.
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CHAPTER 1

INTRODUCTION

Research Background

The increasing diversity of the workforce and a greater emphasis on teamwork in today’s organizations necessitate a better understanding of how to ensure unity in heterogeneous work teams. Defined by Guzzo and Dickson (1996: 308-309), work teams are “made up of individuals who see themselves and who are seen by others as a social entity, who are interdependent because of the tasks they perform as members of a group, who are embedded in one or more larger social systems (e.g., community, organization), and who perform tasks that affect others (such as customers or coworkers).” Work teams come in different types (e.g., some teams consist of fairly functionally homogeneous members, whereas others are more functionally diverse; Mathieu, Maynard, Rapp, & Gilson, 2008), but one key element that is common to all teams is task interdependence among team members (Mathieu et al., 2008). Based on the levels of dependence that group members have with each other, Thompson (1967) proposed a hierarchy of task interdependence in work groups: pooled, sequential, and reciprocal. While under pooled interdependence, there is no need for members to interact with one another (group performance is the sum of individual performances), sequential interdependence (such as in an assembly line) and reciprocal interdependence (such as in a surgical team) describe task-performing situations where members need materials, information, and support from each other to be able to carry out their jobs successfully (Pearce & Gregersen, 1991; Van...
der Vegt, Van de Vliert, & Oosterhof, 2003). For team research in general and this study in particular, work groups of the latter two types are considered teams.

In brief, team members need to cooperate and work interactively to complete tasks (Stewart & Barrick, 2000). However, interdependence among team members may require a sacrifice in individual autonomy and interests (Stewart & Barrick, 2000). Meanwhile, the activities of one sub-unit may have fairly direct consequences on another sub-unit’s goal pursuit (Ephron, 1961). Additionally, teamwork becomes more challenging when team members differ in their relational demography, values, personality, and pay (Harrison & Klein, 2007). Thus, work teams face considerable challenges to function effectively. One of the biggest challenges for teams is intra-team conflict, defined as the process resulting from tension between team members because of real or perceived incompatibilities or differences (De Dreu & Weingart, 2003; De Dreu & Gelfand, 2008).

However, research has generally yielded mixed results regarding the effects of team diversity and intra-team conflict on team processes and outcomes (Horwitz & Horwitz, 2007; de Wit, Greer, & Jehn, 2012). In Horwitz and Horwitz’s (2007) meta-analytical review, a positive effect of task-related diversity (e.g., functional expertise, education) on team performance was generally supported, but bio-demographic diversity (e.g., age, gender, and ethnicity) was not shown to be related to team performance; also, no effect of team diversity on social integration (e.g., team cohesion, team member satisfaction) was found. Harrison, Price, and Bell (1998) proposed another type of diversity, namely deep-level (e.g., attitudes, beliefs, and values) diversity, and showed that deep-level diversity was negatively related to team member satisfaction. de Wit et
al.’s (2012) meta-analysis demonstrated that while relationship conflict (defined as an awareness of interpersonal incompatibilities, including affective components such as feeling tension and friction; Jehn & Mannix, 2001) and process conflict (defined as an awareness of controversies about aspects of how task accomplishment will proceed; Jehn & Mannix, 2001) were negatively related to team outcomes (e.g., trust, cohesion, satisfaction, commitment, and performance), while task conflict (defined as an awareness of differences in viewpoints and opinions pertaining to a team task; Jehn & Mannix, 2001) was generally not related to these team outcomes.

Two implications from the previous literature on diversity and conflict may be drawn. First, since relationship conflict decreases cooperation, communication, and understanding among team members, it is detrimental to both team processes and team performance (Jehn, 1995; Jehn & Bendersky, 2003). Reducing relationship conflict helps prevent these negative consequences from occurring. Yet, this “prevention” approach has only uncovered one aspect underlying complex team interactions: Teams that are free from relationship conflict are less likely to be subject to those negative effects. However, no evidence has shown that a mere lack of conflict would benefit the team and improve team effectiveness. What seems to be largely missing in the literature involves a conceptualization that presents tensions among team members as a desired state. Such a conceptualization will no longer consider interpersonal tensions as detrimental to team effectiveness, and thus teams can even benefit from the tensions among team members.

Second, despite the fact that diversity of input has been argued to drive organizational innovation (Thompson, 1965) and that task-related diversity is generally beneficial to team performance (Horwitz & Horwitz, 2007), the impact of diversity on
team social integration has seldom been shown to be positive (Horwitz & Horwitz, 2007). Moreover, both bio-demographic diversity and deep-level diversity have been found to negatively affect team social integration and performance (Horwitz & Horwitz, 2007). Thus, a new conceptualization of diversity may be needed, and knowledge concerning how to capitalize on diversity so as to facilitate team social integration and performance seems especially desirable.

In fact, enthusiasm in studying relationship tensions or conflict derived from diversity (particularly deep-level diversity; Mohammed & Angell, 2004) is rooted in the Western context. The assumption behind the notion of relationship conflict suggests that interpersonal differences and incompatibilities are difficult to deal with and can distract members from the task at hand (Jehn & Bendersky, 2003). However, in other cultural ideologies, especially in Confucian culture, the paradoxical nature of tensions is appreciated and emphasized (Chen & Miller, 2010; Smith & Lewis, 2011). It is widely believed that seemingly incompatible elements can be integrated harmoniously and that maintaining harmony is vitally important (Chen, 2002). When it comes to the issue of interpersonal relationships, harmony has traditionally been held in very high regard (Huang, 1999). For instance, many Chinese people believe that “If the family lives in harmony, all affairs will prosper” (Leung, Koch, & Lu, 2002: 202).

In the current research, I suggest that there is a need to advance research on relational harmony in the management literature. The word *harmony* refers to a pleasing combination or arrangement of different things (Merriam-Webster’s online dictionary, April 6, 2015), and can be understood as a desired outcome of diversity. A harmonious relationship, different from one that is simply satisfying (Kwan, Bond, & Singelis, 1997),
entails a dynamic equilibrium of different forces and is achieved following certain socially endorsed exchange principles (Earley, 1997). Thus, the construct of relational harmony may have the advantage of conceptualizing conflict and diversity in a more balanced or even positive way.

Drawing upon different perspectives concerning harmony, from philosophy (e.g., no real harmony exists without opposition and tensions; Li, 2008), cultural psychology (e.g., harmony serves as the guiding principle for social relationships when disagreements occur; Huang, 1999; Leung et al., 2002; Leung, Brew, Zhang, & Zhang, 2011), and social psychology (e.g., harmony is seen as a two-way exchange in interpersonal interactions; Earley, 1997; Quek, Knudson-Martin, Rue, & Alabiso, 2010), I suggest that the state of harmony should be characterized by mutuality and should comprise a series of positive social exchanges between or among different participating entities. In addition, relational harmony is characterized by an acceptance of the tension between participating parties or the accommodation of incompatibilities when necessary (Leung et al., 2002; Li, 2008). It should be noted that the term “acceptance” used here does not suggest agreement in attitudes or behaviors, but rather the acceptance of one another’s individuality as a person. In that sense, “mutual acceptance” may be related to the notion of “tolerance of diversity” (i.e., persons can be different without getting into difficulties; a driver for innovation in organizations, Siegel & Kaemmerer, 1978) because both concepts contain an attitude of acceptance of differences. Finally, simply having a mutually accepting relationship is not sufficient to be called a harmonious one because relational harmony is “we-centered” and prioritizes the joint relationship over individual needs (Quek et al., 2010). Thus, harmonious relationships should also be mutually beneficial, serving the best interest of
one another or of the collective. Hence, I use the term “benevolence” to describe the second aspect of relational harmony. Chapter 2 will provide a detailed review of the literature on harmony, as well as relational harmony in organizational settings, but to facilitate understanding, I present my definition of relational harmony here: Relational harmony refers to the coexistence of two or more entities in a state of mutual acceptance and benevolence.

Harmonious relationships may be desirable to individuals in just about any context, but it is perhaps most critical and urgent to understand how relational harmony is achieved and maintained in work teams (Lun & Bond, 2006). Work teams are comprised of individuals who are different—a pre-assumption of team diversity research. Thus, it is meaningful to ask how to achieve team relational harmony given different types of diversity.

Research on the effects of different types of team diversity typically builds arguments based on different theoretical perspectives. For example, studies of the effects of bio-demographic diversity (e.g., age, gender, and ethnicity) or deep-level diversity (e.g., attitudes, beliefs, and values) usually draw on social identity theory (SIT, Tajfel, 1978), social categorization theory (SCT, Turner, 1985), and the similarity-attraction paradigm (Jackson, Brett, Sessa, Cooper, Julin, & Peyronnin, 1991). This line of research argues that individuals categorize team members based on detectible attributes and develop favoritism toward members who are more similar to themselves. Studies of the effects of task-related diversity (e.g., functional experience, industry experience, and education) generally draw on an information processing perspective (Tushman & Nadler, 1978; Hinsz, Tindale, & Vollrath, 1997), in support of a positive impact of task-related
diversity on team creativity and problem solving because task-related diversity is associated with a wide range of ideas, perspectives, and knowledge (Horwitz & Horwitz, 2007; Shin, Kim, Lee, & Bian, 2012).

What has been largely overlooked in team diversity research is the effect of disparity diversity (Harrison & Klein, 2007). Disparity diversity refers to the composition of differences in the proportion of socially valued resources that team members hold, such as power, status, and decision-making authority. Disparity attributes affect one’s position in the social hierarchy (Magee & Galinsky, 2008). For example, some team members may have a substantial amount of expertise or experience and therefore be seen as possessing more prestige; some may receive higher pay; some may have better relationships with the team leader such that they are advantaged in the distribution of resources or promotions. It has been argued that social hierarchies (not organizational hierarchies) are ubiquitous and frequently develop informally in teams (Magee & Galinsky, 2008). Greater disparity diversity is arguably associated with more within-team competitions, resentments, and perceptions of inequity and inequality, as well as reduced member inputs (Harrison & Klein, 2007).

Transforming Disparity Diversity to Relational Harmony—A Subgroups Perspective

The existence of disparity diversity (i.e., status differentials or power differentials) in teams implies that resources are unevenly distributed among team members and can thereby cause tensions and competitions (Harrison & Klein, 2007). Such distributions and allocations of resources are embedded in a series of social exchanges (Foa & Foa, 1974) and are deeply influenced by the power structure within a team (Gillmore, 1983). It can
be thus expected that an imbalanced exchange that is “one-way”, unfair, threatens one’s unique social identity, or impairs the superordinate team identity, can potentially hamper relational harmony. In contrast, a balanced social exchange that is dynamic, fair, protects one’s distinctiveness, and ensures the superordinate team identity, is beneficial for team relational harmony. Therefore, to transform disparity diversity to relational harmony, team members must develop balanced exchanges despite their differences in status or power.

Research on team diversity has progressed beyond the consideration of diversity in a single attribute to investigate the effects of the alignment of multiple individual attributes on team processes and outcomes (Lau & Murnighan, 1998). Specifically, theories of group faultlines and subgroups have shed light on the effect of different team configurations on team processes and outcomes (Lau & Murnighan, 1998; Carton & Cummings, 2012). Faultlines are hypothetical dividing lines that split a team into two or more subgroups based on one or more individual attributes (Lau & Murnighan, 1998; Thatcher & Patel, 2012). Despite the increasing popularity of research on subgroups in organizational settings (Hornsey & Hogg, 2000a; Cronin, Bezrukova, Weingart, & Tinsley, 2011; Carton & Cummings, 2012, 2013), there still remains a need to understand how to harness the benefits of subgroups so as to achieve desirable team outcomes. As mentioned above, faultlines and subgroups are notions derived from the diversity literature, with their strength being their ability to simultaneously depict patterns of multiple individual attributes (Lau & Murnighan, 1998).

The concept of subgroups is not new, and can be traced back to the 1940s-1950s when researchers developed theory and an analytical method (sociograms) to study social
networks and detect cliques in larger groups (e.g., Northway, 1940; Festinger, 1949; Harary & Ross, 1957). This dissertation does not refer to subgroups in this regard but draws upon the theory of subgroups developed by Carton and Cummings (2012) from a team diversity perspective. Carton and Cummings’s (2012) theory has identified three types of subgroups, which differ according to their underlying theoretical tenets governing inter-subgroup relations. *Identity-based subgroups* are subgroups based upon members sharing a common identity and their inter-subgroup relationships are governed by social identity theory and social categorization theory (Tajfel, 1978; Turner, 1985). *Knowledge-based subgroups* are subgroups based upon various sets of knowledge that different members hold and their inter-subgroup relationships are governed by an information processing perspective (Tushman & Nadler, 1978; Hinsz, Tindale, & Vollrath, 1997). *Resource-based subgroups* are subgroups based on members’ differences in ability to claim resources and their inter-subgroup relationships are governed by social dominance theory (Sidanius, 1993; Sidanius & Pratto, 1999). It is worth mentioning that the formation of resource-based subgroups in work teams is primarily based on disparity diversity, and it has received the least attention in team diversity research (Mannix & Neale, 2005; Carton & Cummings, 2012).

In this dissertation, I focus on the effects of resource-based subgroups, particularly subgroups based upon members’ differences in work-related power and status (two social resources; Foa, 1971; Foa & Foa, 1974), on team relational harmony and performance. Specifically, I investigate how the configurational properties (including the number of subgroups and the variation of subgroups in size; Carton & Cummings,
2012) influence harmonious team interactions, as well as the extent to which harmony translates subgroups’ effects to affect team performance.

Additionally, the seminal work of Carton and Cummings (2012) on a theory of subgroups has motivated scholars to identify conditions that accentuate positive inter-subgroup processes and inhibit negative inter-subgroup processes. By so doing, team leaders will be informed about the processes that can transform these subgroups into more beneficial and less detrimental entities. It has been suggested that team leaders exert greater influence on team interactions than any other single individual (Sherif & Sherif, 1953) and, therefore, I investigate the moderating role of leadership on relationships among subgroup configuration, team relational harmony, and team performance. Specifically, the role of leader interaction facilitation behaviors (Bowers & Seashore, 1966) is elucidated and empirically examined. This approach will provide actionable knowledge that informs managers of how to deal with resource-based subgroups in teams so as to improve relational harmony and team performance.

**Intended Contributions**

This dissertation contributes to the literatures on relationship dynamics, intra-team conflict, team diversity, subgroups, and leadership in several ways. First, I introduce, conceptualize (Chapter 2), and operationalize (Chapter 4, with three studies) the notion of relational harmony to advance the research on relationship dynamics in organizational settings in general and in team settings in particular. Special attention is paid to differentiate relational harmony from a lack of relationship conflict, with the purpose being to provide a conceptualization that presents relationship tension as a neutral or even desirable state. Second, I develop hypotheses (Chapter 3) and examine (Chapters 5 and 6)
whether the existence of subgroups based on resource differentials (which are indicative of disparity diversity) is necessarily detrimental to team relational harmony, as well as how the compositional split of a team translates to harmonious intra-team interactions. Specifically, as shown in the guiding research model in Figure 1, I study how configurational properties (i.e., the number of subgroups and the variation of subgroups in size) of resource-based subgroups facilitate harmony or mitigate disharmony. Third, I contribute to theory and practice by developing hypotheses (Chapter 3) and examining (Chapters 5 and 6) how to curb the negative consequences of resource-based subgroups while harnessing the benefits of subgroups from a leadership perspective. Specifically, as shown in Figure 1, I examine the moderating effects of leader interaction facilitation behavior (Bowers & Seashore, 1966)—a team-oriented leadership behavior—on the relationships between the two configurational properties of subgroups and team relational harmony. Additionally, I examine two moderated indirect effects where team relational harmony further translates the impact of resource-based subgroup configurational properties and leadership interaction facilitation behavior to team performance.
CHAPTER 2
DEFINITION OF RELATIONAL HARMONY

This chapter aims to develop relational harmony as a construct specific to the field of management in general and organizational behavior in particular, to facilitate our understanding of dynamic interpersonal interactions and tensions in team settings from a more positive lens. In this chapter, I begin by reviewing relevant literature on the notion of harmony and proceed by conceptualizing relational harmony in the organizational context. Next, I elucidate the specific elements of harmonious relationships in work teams. Finally, I focus on the differences between relational harmony and other related constructs.

The Concept of Harmony

The English word “harmony” is derived from the Greek word ἁρμονία (harmonía), which means “joint.” In Merriam-Webster’s online dictionary, harmony is defined as a pleasing combination or arrangement of different things (Merriam-Webster’s online dictionary, April 6, 2015). This term is widely used in the field of music, where the state of contrasted voices or notes working in concert is described as harmony. Heraclitus (ca. 535—ca. 475 BCE) is among the earliest Greek philosophers to explore the notion of harmony, which is defined as “the opposites in concert” (Li, 2008). He maintained that no real harmony exists without opposition and tensions. In other words, tensions are essential to harmony. Such understanding of harmony coincides with the Chinese Confucian philosophy where the dynamic nature of tension within harmony is stressed.
(Li, 2008). The concept of harmony is only applicable when a system that is composed of two or more entities has achieved a balance between paradoxical tendencies (Chen, 2002) and among various potentially opposing forces (Earley, 1997).

Social scientists have used harmony for different purposes, which open the term to different interpretations. In most studies on culture (e.g., Kwan et al., 1997; Hwang, 1998; Leung et al., 2011), harmony is conceived as an important social value in collectivist societies (Leung et al., 2002). Harmony is not only valued as the terminal goal of the society at large, but also serves as the guiding principle for any social unit, such as families, friends, neighbors, and work groups, when disagreements occur (Leung et al., 2011). In China, numerous idioms and proverbs revolve around the notion of harmony, including “Harmony is precious,” “Harmony is beauty,” “Harmony brings wealth,” “Harmony brings good luck,” “If the family lives in harmony, all affairs will prosper,” and so on. In Japan, social harmony is viewed as more important than fairness (Ohbuchi, 1998). Similar values are relevant in South Korea, where group harmony is an important managerial value in organizations (Cho & Park, 1998). Interestingly, such emphasis on harmony does not impose oneness or necessarily mean “in agreement.” According to Confucius, “The gentleman1 is in harmony with those around them but not on their level. The small man is on the level of those around them but not in harmony with them” (translation quoted from Ebrey, 1993: 19). In other words, gentlemen seek harmony but not uniformity. They get along with each other but do not necessarily agree with each other, implying that conflict and harmony can coexist.

---

1 The original form of “gentleman” is “junzi”, literally meaning the “son of the ruler”. This term has been translated into English as “person of virtue,” “gentleman,” or “superior man,” (Woods & Lamond, 2011) and is not gender-related. Specifically, a junzi is a “notable person who attempts to actualize Confucian cardinal virtues in concrete human relationships at any cost.” (Anh, 2008: 103)
Harmony can be also viewed to have an instrumental element—as a means to a particular materialistic end (Leung et al., 2002). For example, a distinction between superficial harmony and genuine harmony was made by Huang (1999). Genuine harmony implies an active use of sincerity, trust, and support in interactions, whereas superficial harmony is associated with passive disregard or isolation from the status quo. Superficial harmony is simply rendered as a passive way to avoid the disintegration of an ongoing relationship (Leung et al., 2011) and to secure the proper function of a social unit (Leung et al., 2002).

Earley (1997) defined harmony as a system-level dynamic process of regulation in interpersonal interactions. In its simplest form, harmony can be considered as a type of “social exchange.” Earley (1997) argued that harmony is achieved when the regulation of resource exchanges attains a dynamic equilibrium. In addition, harmony denotes more than merely a static balance point but activities of social actors who behave intentionally and mutually toward a particular balance among themselves. According to Earley (1997), harmony within a group may refer to the exchange of personal resources among group members to attain an equal distribution of resources. For example, harmony may reflect the willingness of a group member to accept instructions from a more powerful group member. Similarly, harmony may also depict a situation where a superior group member is willing to give up his privilege while empathizing with subordinates.

In summary, the first two perspectives—the value perspective and instrumental perspective—are particularly pertinent to explaining how tensions are viewed and handled in interpersonal interactions. Superficial harmony is beyond the scope of discussion in this study because it involves a negative view of the other person and a
tendency to protect one’s own interest. It is simply used as a passive way to avoid the disintegration of an ongoing relationship (Leung et al., 2011). In addition, Earley’s (1997) viewpoint emphasizes the mutual and dynamic exchange process in interpersonal interactions. In essence, harmony has received the most attention in studies that aimed to understand complex interpersonal relationships (e.g., Kwan et al., 1997; Lun & Bond, 2006; Chen, Chan, Bond, & Stewart, 2006).

Before elucidating the concept of harmony in interpersonal relationships, I argue that three assumptions should be made. These assumptions define the conceptual boundaries of relational harmony as a new construct. First, harmony has never been denoted as the opposite of conflict or characterized by a lack of conflict. Rather, harmony is distinguished by the regulation of dissonance, the tolerance of differences, and a genuine consideration of others when interests conflict. Therefore, the conceptualization of harmony in the context of interpersonal relationships is distinguishable from that of relationship conflict, which has been defined as an awareness of interpersonal incompatibilities, and includes affective components such as feeling tension and friction (Jehn & Mannix, 2001). Second, although mostly evident and applicable in collectivistic societies (Kwan et al., 1997), harmony should be a culture-unbounded construct. Therefore, the elements of relational harmony ought to be universally endorsed and should have no particular indigenous meaning. Lastly, the study of interpersonal relational harmony is not restricted to a particular social context or a certain level of analysis. Instead, harmony can be used to describe any type of social relationship (e.g., partners, families, friends, coworkers, etc.) at any level of analysis (e.g., interpersonal dyad, intragroup, intergroup, etc.).
Defining Relational Harmony in Organizational Settings

The term relationship harmony or relational harmony has been presented in the social psychology literature. Social psychologists have studied harmony particularly within a house (Banker & Gaertner, 1998) and between partners (Quek et al., 2010). In studying marriage relationships, Quek and colleagues (2010) maintained that relational harmony is “we-centered” and prioritizes the marriage relationship over individual needs. Harmonious marriage relationships are characterized by (1) a focus on mutuality, (b) a dyadic emphasis, (c) a collaborative authority structure (i.e., decisions are expected to be shared), (d) flexible roles (i.e., work and family tasks are negotiated according to availability, choice, and family needs), (e) two voices (i.e., expression of differences), and (f) personal agency (i.e., a recognition of individual experience and choice), which promote equality (Quek et al., 2010). Surprisingly, harmony in organizations has not been seriously examined (Chen, Unal, Xin, & Leung, 2014). Given that the word “harmony” implies that interacting entities are different, that contemporary organizations have become more diverse, and that work relations are more diversified and complex, advancing knowledge on how to secure relational harmony in organizational settings seems highly desirable.

Drawing on the past research and perspectives reviewed above, I define relational harmony as the coexistence of two or more entities in a state of mutual acceptance and benevolence. Specifically, I define mutual acceptance as the extent to which neither entity tries to dominate or change the other or the other’s situation. Mutual benevolence is defined as the extent to which both entities are disposed to or actually act beneficially toward each other. Four defining elements that comprise relational harmony appear in
the definition. First, the referent of harmony is a relationship involving at least two different entities. An individual’s motivation to avoid conflict is not harmony; an individual’s ability to resolve conflict is not harmony; an individual’s own action to deal with interpersonal issues is not harmony. “Coexistence,” therefore, is the most critical element of relational harmony. Second, harmonious relationships are *mutual*. This is congruent with the conceptualization of harmony by Earley (1997) as an exchange process and the emphasis of Quek et al. (2010) on mutuality and its dyadic nature. Thus, harmonious relationships contain the intentions and anticipated actions of all parties that are directed toward the same balance point. Third, harmonious relationships are *accepting*. As previously discussed, tension or incompatibility and harmony are inseparable: A harmonious relationship features acceptance of the tension between participating parties or the accommodation of incompatibilities when necessary (Leung et al., 2002; Li, 2008). These features are not only in line with the perspective of harmony as a means to resolve conflict (Leung et al., 2011) but are also in close parallel with the findings of Quek et al. (2010), which show that embracing multiple perspectives and opinions are essential to maintaining harmony. It should be noted that mutual acceptance is *the extent to which neither entity tries to dominate or change the other or the other’s situation* as a person. I recognize that it is constructive for the participating parties in a relationship to influence each other (in terms of their attitudes or even behaviors) to achieve mutually beneficial goals. However, I focus on the mutual acceptance of one another’s individuality and unique characteristics in particular when referring to mutual acceptance. Thus, the idea of mutual influence does not preclude the notion of mutual acceptance. Fourth, harmonious relationships are *benevolent*. Although mutual
acceptance is fundamental to harmony, mere acceptance that is not genuinely beneficial to each party may be regarded simply as a form of avoiding the disintegration of an ongoing relationship (i.e., superficial harmony; Huang, 1999). Although both parties of a relationship are likely to accept incompatibility and tensions with the other, each party can act in a way that would only benefit its own interest without considering the interest of the other party or that of the collective (Earley & Gibson, 1998). This specific circumstance should be excluded when describing harmony. Thus, I propose that benevolence, defined as the extent to which both entities are disposed to or actually act beneficially toward each other, is the final feature of relational harmony.

A few aspects of the definition are noteworthy. First, I restrict the definition of relational harmony to the organizational setting, owing to the particular literature I draw upon and the phenomena seen in the business world. Relational harmony in other social settings, for instance, international relations (e.g., Buzan, 1984), may have a broader or different meaning; I do not intend to include these aspects in the current research.

Second, the definition emphasizes that relational harmony is a state rather than a social value, an instrumental motive, or a process. Despite the rich and insightful discussion on harmony by Earley (1997) as a broad concept and a dynamic process, adhering to such perspective could be difficult for future empirical testing. Therefore, my definition is significantly narrowed and is meant to reflect a state of equilibrium in a particular social relationship. However, I fully concur with Earley (1997) that harmonious relationships are a form of social exchange by nature. Thus, when one party receives a rewarding activity from the other, the recipient is obligated to the giver; to discharge this obligation, this recipient must provide benefits to the reward giver (Blau,
The difference is that I focus more on the equilibrium state of mutuality, whereas Earley (1997) emphasizes the regulatory process. In addition, this state perspective of harmony suggests that the exchange is not a one-time transaction but a dynamic process, where both parties in a relationship act in the same way.

Third, the definition specifies two universal elements of relational harmony—acceptance and benevolence. People in a relationship can accept each other but not act in a benevolent way toward one another, or they can be benevolent to each other without cognitively accepting any incompatibility between them. Neither of the two situations is harmonious. Only when the degrees of acceptance and benevolence are both high would harmony exist.

Lastly, I have further provided specific explanations for my meaning of “mutual acceptance.” To repeat, I define mutual acceptance as the extent to which neither entity attempts to dominate or change the other or the other’s situation. Mutual acceptance describes a situation where neither party of a relationship is actively pursuing dominance over the other or change in the other’s individuality as a person. It does not include the situation where social hierarchy (e.g., power and status, Magee & Galinsky, 2008) has already existed, which will be elaborated in detail in the next chapter. In brief, the existence of a distinction between superior and subordinates does not necessarily imply disharmony, but changing one’s place in the social hierarchy intentionally (especially lowering one’s status or power) may do so. Additionally, the definition of mutual benevolence (the extent to which both entities are disposed to or actually act beneficially toward each other) highlights both the dispositional aspect and the behavioral aspect of benevolence. The inclusion of mutual benevolence as one of the defining elements of
harmony is congruent with Quek et al. (2010), who stress that relational harmony is “we-centered”, and is consistent with Huang (1999), who emphasizes the use of sincerity and support in interactions that are genuinely harmonious.

**Adding Relational Harmony to Work Teams**

Earlier in this chapter, I argued that harmony is not limited to any particular social relationship or to any particular level of analysis. In organizational settings, harmony can exist at the dyadic (e.g., between two people), intragroup (e.g., among members within a work team), intergroup (e.g., between teams or small factions), and inter-organizational level (e.g., between organizations). In this dissertation, I limit my study of relational harmony to the team level particularly because of the following reasons. First, the increasing diversity of the workforce and a greater emphasis on teamwork in today’s organizations necessitate better understanding of the processes required to ensure unity despite heterogeneity in work teams and to leverage that unity to achieve better performance. Relational harmony, with its emphasis on coexistence, mutuality, acceptance, and benevolence, describes a desired state for work teams to function effectively even in the presence of broad diversity, particularly demographic diversity or disparity diversity as they are usually associated with intra-team relationship conflict and competition (Jehn, 1995; Harrison & Klein, 2007). Second, harmony would not be applicable if no tension exists between the interacting entities. Work teams, therefore, provide an excellent setting, where conflict—the process resulting from tensions between team members because of perceived or actual differences—is prevalent (De Dreu & Weingart, 2003). As discussed earlier, the construct of relational harmony goes beyond a consideration of the potential negative consequences of incompatibility as most conflict
research does. Rather, relational harmony presents tension and incompatibility as inherent, while stressing that mutual acceptance (e.g., tolerance of difference) is an important component of harmony. Thus, the study of relational harmony in work teams would complement the mainstream study of intragroup conflict (Jehn, 1995; Jehn & Bendersky, 2003) from a more positive lens. Third, teamwork requires team members to share resources (Wageman, 1995), yet social hierarchies in a team (Magee & Galinsky, 2008), such as status or power differentials, whether explicit or implicit, threaten the distribution and receipt of scarce resources among all team members (Binning & Huo, 2012). Therefore, studying the fair sharing and exchanging of personal resources among team members until a balance point can be attained, which is reflected in the concept of relational harmony, is important (Earley, 1997). Fourth, team relational harmony differs from harmony in a dyad in the sense that a work team is typically composed of more than two members, enhancing the complexity of the issue of accord. For example, a member may have harmonious relationships with a subset of team members but not with the rest. In this case, team relational harmony may be threatened. Cultural researchers have proposed a pluralism strategy to help achieve unity amid cultural or ethnic diversity. Pluralism, instead of suggesting the pursuit of a superordinate common group identity, pays particular attention to the notion of subgroup respect and stresses the bridging of divides between subgroups (Huo & Molina, 2006). This perspective has numerous implications for studying team relational harmony and it makes team relational harmony a unique phenomenon. When teams become more diverse and the size of a team increases, it is likely that work teams be split into two or more homogeneous subgroups (Carton & Cummings, 2012), making the maintenance of relational harmony at the superordinate
team level more challenging. It is primarily this last reason that has inspired the current team relational harmony research to take a subgroup perspective.

Team relational harmony, therefore, refers to the coexistence of team members in a state of mutual acceptance and benevolence. Specifically, it can be understood as the extent to which all team members mutually accept each other’s individuality and uniqueness (i.e., mutual acceptance), while serving the best interests of each member or those of the collective (i.e., mutual benevolence). It should be noted that a similar state has also been presented in Tuckman’s (1965) group development model. Tuckman (1965) reviewed the literature of group development and identified a “norming” stage where members accept the idiosyncrasies of fellow members and establish new group-generated norms to insure the group’s existence. Notably, Tuckman (1965: 386) specifically mentioned that at this stage “harmony is of maximum importance,” yet no specific definition of harmony was given. Despite this model’s popularity both in the academic literature and in practice, Tuckman in fact pointed out that “quantitative explorations will undoubtedly lead to refinements and perhaps major modifications of such a model” (Tuckman, 1965: 398) and that this article suffered from a fairly large observer bias (Tuckman & Jensen, 1977). A very recent review article (Humphrey & Aime, 2014) maintained that there had been only one empirical test of the model (Runkel, Lawrence, Oldfield, Rider, & Clark, 1971) and that the lifecycle model had notable flaws, with the most critical one being that clear transitions between the stages was difficult to validate. Moreover, Tuckman (1965) seems to believe that teams go through the conflict (“storming”) and the harmony (“norming”) stages in sequence, which contradicts an underlying assumption of this research. Therefore, I argue that the development of the
construct of team relational harmony is distinguished from that of a lifecycle model like Tuckman’s (1965) because harmony does not preclude conflict.

**Relevant Constructs**

In this section, the uniqueness of relational harmony as a new construct is discussed by comparing relational harmony with other relevant constructs. The assertion that relational harmony is a distinct construct is thereby supported.

**Intragroup conflict.** In organizational research, intragroup conflict is broadly defined as “perceived incompatibilities or discrepant views among the parties involved” and is seen as antecedent to group satisfaction, creativity, and performance (Jehn & Bendersky, 2003: 189). The typology of task versus relationship conflict (Jehn, 1995), together with the subsequent typology of task, relationship, and process conflict (Jehn & Mannix, 2001), has been the basis of many studies on intragroup conflict (Korsgaard, Jeong, Mahony, & Pitariu, 2008). In particular, relationship conflict refers to an awareness of interpersonal incompatibilities and includes affective components, such as feeling tension and friction (Jehn & Mannix, 2001). Although I have claimed that the study of relational harmony in work teams would complement the extant research on intragroup conflict from a different perspective, the conceptual differences between these two constructs should be apparent. In developing the construct of relational harmony earlier in this chapter, I have paid special attention to differentiating relational harmony from its counterpart, relationship conflict. To briefly summarize, a mere absence of relationship conflict does not suggest relational harmony; Relational harmony encompasses four defining elements—coexistence, mutuality, acceptance, and benevolence—which may exist even in the presence of conflict.
Leader-member exchange, team-member exchange, and coworker exchange.

Relational harmony, as reviewed earlier, is a concept denoting social exchange (Earley, 1997). In the long history of studying interpersonal exchange in the management and organizational literature, leader-member exchange (LMX) is one of the most researched forms (Graen & Uhl-Bien, 1995). LMX theory suggests that leaders develop idiosyncratic relationships with different followers (Dansereau, Graen, & Haga, 1975). These relationships range from low to high quality, with high-quality LMX characterized by mutual liking, trust, respect, and obligation (Graen & Uhl-Bien, 1995; Liden & Maslyn, 1998). Seers (1989) extended the theory to develop the concept of team-member exchange (TMX), which is defined as “the individual member’s perception of his or her exchange relationship with the peer group as a whole” (Seers, 1989: 119). Seers (1989: 119) further maintained that TMX “should measure the member’s perception of his or her willingness to assist other members, to share ideas and feedback and in turn, how readily information, help, and recognition are received from other members”. Based on this idea, TMX is an individual-level construct and does not capture the level of exchange quality of all members as a team. Coworker exchange (CWX) was later proposed to extend the concept of TMX and incorporate a dyadic perspective (Sherony & Green, 2002).

According to Sherony and Green (2002), CWX is conceptualized as a dyadic process and measured through dimensions that are similar to those used by LMX. However, relational harmony differs from TMX or CWX, and has a unique theoretical meaning. Relational harmony at the interpersonal dyadic level differs from CWX primarily because my conceptualization of relational harmony stresses the issue of coexistence of differences and mutual acceptance in a social relationship, whereas CWX places an emphasis on
respect, trust, and obligation (Sherony & Green, 2002) (despite the fact that CWX measures do not strongly capture the notion of “exchange”; Bernerth, Armenakis, Feild, Giles, & Walker, 2007; Colquitt, Baer, Long, Marie, & Halvorsen-Ganepola, 2014). Moreover, at the team level, team relational harmony is a team property shared by all team members, different from an individual team member’s perception of his or her exchange relationship with the team as a whole (i.e., TMX).

Viscidity. Hemphill (1956: 4) defined viscidity as “the degree to which members of the group function as a unit”. It implies an absence of dissension and personal conflict among group members, an absence of activities serving to advance only the interests of individual group members, and the ability of the group to resist disrupting forces. The element of “absence of dissension and personal conflict” is in contrast with the assumption of harmony in that harmony does not necessarily mean “in agreement” but instead refers to the coexistence of different characteristics, opinions, viewpoints, situations, and so on, with an attitude of tolerance and acceptance.

Group cohesiveness. Group cohesiveness has been one of the most thoroughly studied group properties (Mathieu et al., 2008). At first glance, the notion of relational harmony seems to be in close proximity to cohesiveness, as both capture the nature of unity. In social science in general and the management literature in particular, however, the term group cohesiveness is conceptually different from my definition of harmony. Festinger and his colleagues (1950: 164) were the first to formally define group cohesiveness as “the total field of forces which act upon a member to remain in the group.” Modifications of this original definition resulted in conceptualizations of group cohesiveness that include such elements as attraction to the group, resistance to leaving,
and perception of the group being better than others in terms of mutual attraction among members (Seashore, 1954). Another group of scholars (e.g., Lott & Lott, 1965; Forsyth, 1983) emphasized “interpersonal attraction” as the sole operative element in the concept of group cohesiveness. Cohesive groups are characterized by shared perceptions that members prefer to remain in the group rather than to leave, and that the group is better than other groups in terms of the way members get along with one another and “stick together” (Seashore, 1954). None of the elements defined in the construct relational harmony—coexistence, mutuality, acceptance, or benevolence—has been stressed or even mentioned in the notion of group cohesiveness.

**Summary**

In this chapter, I reviewed the extant literature on the concept of harmony and conceptualized relational harmony in the organizational context. Relational harmony is defined as *the coexistence of two or more entities in a state of mutual acceptance and benevolence*. Specifically, mutual acceptance is the extent to which neither entity tries to dominate or change the other or the other’s situation (as a person). Mutual benevolence is the extent to which both entities are disposed to or actually act beneficially toward each other. Moreover, I illustrated the importance of introducing relational harmony in work teams and the aspects that make studies on team relational harmony unique and interesting. I adapted my definition of relational harmony to the team setting, and referred to team relational harmony as the coexistence of team members in a state of mutual acceptance and benevolence. Specifically, it reflects the extent to which all team members mutually accept each other’s individuality and uniqueness (i.e., mutual acceptance), while serving the best interests of each member or those of the collective
(i.e., mutual benevolence). Moreover, I compared relational harmony with other related constructs to justify the development of a new construct.

As mentioned earlier, one of the motivations to study relational harmony in work teams is the inevitability of smaller subgroups or factions that bring greater inter-subgroup tensions and might adversely affect harmonious relationships in a team. Next, I take the subgroups perspective and develop a theoretical model to explain how team relational harmony can be maintained and how team performance can be preserved despite the existence of subgroups.
CHAPTER 3

RESOURCE-BASED SUBGROUPS, TEAM RELATIONAL HARMONY, AND TEAM PERFORMANCE

Group Faultlines

The concept of group faultlines in organizational research was introduced by Lau and Murnighan (1998) to advance research on group diversity. Diversity is defined as heterogeneity among group members on observable or readily detectable attributes (such as gender, age, or race) or less visible or underlying attributes (such as education, organizational tenure, or values) (Harrison et al., 1998). In organizational research, diversity is explored to explain how compositional properties of a group or team affect group processes and performance. However, meta-analytical results (Horwitz & Horwitz, 2007) have shown that neither bio-demographic diversity (e.g., gender, age, or race) nor task-related diversity (e.g., functional experience, organizational tenure, and education) is related to social integration (e.g., team member satisfaction and team cohesion); only task-related diversity is positively related to team performance. The relationship between bio-demographic diversity and team performance is essentially zero (Horwitz & Horwitz, 2007). To gain nuanced knowledge on the effects of group composition, the concept of group faultlines was proposed (Lau & Murnighan, 1998). Faultlines are defined as hypothetical dividing lines that split a group or team into two or more subgroups based on one or more individual attributes (Lau & Murnighan, 1998; Thatcher & Patel, 2012). The perspective of group faultlines clearly emphasizes that it is the alignment of one or multiple characteristics across group members, rather than the dispersion of a single
attribute, that influences group processes and outcomes (Bezrukova, Jehn, Zanutto, & Thatcher, 2009). Group faultlines become stronger when more attributes align themselves and produce the same split or subgrouping of a group, reducing the number and increasing the homogeneity of the resultant subgroups (Lau & Murnighan, 1998).

Individual attributes that form faultlines are often the same as those discussed in the literature on group diversity. Harrison and Klein (2007) conducted an in-depth examination of the construct of diversity and identified three types of individual attributes. Specifically, differences on attributes can be conceptualized as separation, variation, and disparity. Separation diversity is understood as the composition of differences in (lateral) position or opinion among team members, such as values and attitude. When team separation diversity is at its maximum, team members are polarized, resulting in reduced cohesion, more conflicts, and decreased task performance. Variety diversity refers to the composition of differences in knowledge, experience, and information, and is generally related to higher levels of creativity and better decision quality. Disparity diversity refers to the composition of differences in the proportion of socially valued resources that team members hold, such as power, status, and decision-making authority. Greater disparity diversity is arguably associated with more within-unit competitions and resentments, as well as reduced member inputs. Among these three concepts, studies on disparity diversity, particularly in the context of organizational settings, have been minimal.

Prior research on group faultlines primarily focused on faultlines based on separation attributes. Guided by social identity theory (Tajfel, 1978) and social categorization theory (Turner, 1985), the classification of group members into subgroups has been argued to be disruptive to group processes and outcomes because the existence
of subgroups can potentially make group identity less salient. Individual members are then inclined to develop in-group favoritism toward their own subgroup members and to show less favorable evaluations toward members of the other subgroups. Therefore, intragroup conflict may occur and team performance may be hampered (Pearsall, Ellis, & Evans, 2008; Jehn & Bezrukova, 2010; Thatcher & Patel, 2012). Less attention has been paid to faultlines based on variety attributes, such as members’ information, experience, and functional background (Cooper, Patel, & Thatcher, 2014; Chung, Liao, Jackson, Subramony, Colakoglu, & Jiang, in press). In the few studies identified, the effects of variety-based faultlines are contingent. For example, Cooper and her colleagues (2014) found that the strength of informational faultlines (i.e., the alignment of team member’s education, functional background, and tenure that affects the formation of subgroups) of top management teams is positively related to firm performance when the environment is less dynamic, more complex, and more munificent; whereas faultline strength is negatively related to firm performance when the environment is more dynamic, less complex, and less munificent. Chung and colleagues (in press) observed that in work teams, neither tenure faultline strength nor function faultline strength is associated with individual members’ loyal behavior. Additionally, the relationship between function faultline strength and loyal behavior is positive only when the teams’ supportive diversity climate (defined as shared perceptions among team members that people are treated fairly and are integrated into the work environment regardless of background; Mckay, Avery, Tonidandel, Morris, Hernandez, & Hebl, 2007; Mor Barak, Cherin, & Berkman, 1998) is high, suggesting a contingent positive effect. Based on a literature search using Google Scholar, I did not identify any research that explicitly examined faultlines based on
disparity attributes, such as prestige, status, power, and decision-making authority (Harrison & Klein, 2007).

Subgroups

Two important research streams have contributed to our understanding of subgroups within a larger group. On the one hand, faultline researchers have pinpointed the pivotal role that faultlines play in splitting a team into subgroups, as well as its subsequent consequences. I have briefly reviewed related literature earlier and presented a general discussion. Detailed discussion can be found in Thatcher and Patel (2012). On the other hand, research that goes beyond the domain of faultlines has focused on the effect of subgroups on decision acceptance and perceptions of justice (Huo, Smith, Tyler, & Lind, 1996), subgroup identification (Huo, 2003), and inter-subgroup relations (Hornsey & Hogg, 2000a), as well as the implications of subgroups for social harmony (Hornsey & Hogg, 2000b). This line of research has concluded that social harmony is most likely achieved by maintaining, rather than weakening, subgroup identities, as long as the superordinate identity is salient (Hornsey & Hogg, 2000b). Other research has explored a variety of phenomena associated with subgroups, such as the effect of subgroup configuration on geographically dispersed teams (O'Leary & Mortensen, 2010), the effect of subgroup strength on team learning behavior (Gibson & Vermeulen, 2003), and the effect of power imbalance on the formation of coalitions in small groups (Mannix, 1993).

Carton and Cummings (2012) observed that research on subgroups has not been integrated, although the phenomena associated with subgroups have been widely studied. Thus, they developed a coherent framework and a theory of subgroups in work teams. In
their paper, the authors identified three types of subgroups and explained how each type emerges from three types of faultlines (Harrison & Klein, 2007). As reviewed earlier, *identity-based subgroups* are subgroups based upon members sharing a common identity; *resource-based subgroups* are subgroups based on members’ differences in their abilities to claim resources; *knowledge-based subgroups* are subgroups based upon various sets of knowledge that different members hold. In addition, this theory primarily focused on explaining how subgroup configurational properties (i.e., the number of subgroups and the variation in the size of the subgroups, both determined by group faultlines) of each type affect inter-subgroup processes and team learning. Based on the typology and propositions developed in this theoretical paper, Carton and Cummings (2013) tested the effects of identity-based subgroups and knowledge-based subgroups on team performance in a field setting.

Despite the aforementioned advancement in theory and the empirical testing of group faultlines and subgroups, two issues remain unclear. First, although faultlines are generally considered detrimental to team processes and outcomes (Lau & Murnighan, 1998), Lau and Murnighan (2005) found that a stronger faultline is actually associated with less intragroup relationship conflict. They attributed such unexpected findings to either a generalization effect (i.e., a positive spillover effect from subgroups to the entire group) or unmeasured influences. This observation highlights the fact that speculating about the positive effects of faultlines is not new. Bezrukova and Uparna (2009) argued that faultlines may lead to more creativity. Thatcher and Patel (2012) suggested that when competitive subgroups are desirable, the positive effects of faultlines may be revealed. They also called for examinations of the potential positive effects of faultlines. I argue
that such investigations need to incorporate an expanded range of group processes and outcomes as criteria variables, in addition to the commonly studied constructs (such as satisfaction, conflict, and performance). Second, studies on faultlines and subgroups of other types (in addition to separation-based faultlines and identity-based subgroups or variety-based faultlines and knowledge-based subgroups) are extremely limited. In particular, how resource-based subgroups affect team processes and outcomes remains largely unknown (Carton & Cummings, 2013). Given that the existence of resource-based subgroups is virtually inevitable due to the existence of social hierarchies within a team (Magee & Galinsky, 2008), my aim is, therefore, to study resource-based subgroups in greater detail while demonstrating how to maximize the benefits and mitigate the negatives associated with resource-based subgroups in organizational settings.

**Resource-Based Subgroups: Theoretical Premise**

I employ the definition of resource-based subgroups put forward by Carton and Cummings (2012), which suggests that resource-based subgroups are formed based upon members’ differences in their abilities to claim or gain access to resources. In work teams, the formation of a subset of team members that maintains dominance by having greater access to finite resources, such as materials and information, is not unusual (Carton & Cummings, 2012). Alternatively, a subset of team members may enjoy more prestige and respect in the eyes of others (Sherif, White, & Harvey, 1955). These situations can be understood as arising from power and status differentials in teams. However, the difference is that resources are a zero-sum commodity (e.g., only some members can possess important information) in the first scenario, whereas resources are not limited in
the second scenario, meaning that all members (or none) can possess a significant amount of such resources (Anderson, Willer, Kilduff, & Brown, 2012).

The notion of “resource-based subgroups” is derived from social dominance theory (SDT) (Sidanius, 1993; Sidanius & Pratto, 1999), which discusses intergroup processes based on specific resources that structure or reinforce a social hierarchy. SDT asserts that group-based hierarchy is ubiquitous in any society. Dominant groups, compared with subordinate groups, have greater access to resources. SDT provides a comprehensive and multileveled understanding of the dynamics of group-based social oppression, such as discrimination, racism, and ethnocentrism (Sidanius, Pratto, van Laar, & Levin, 2004). One of the greatest contributions of SDT is the behavioral asymmetry hypothesis, also referred to as the asymmetrical ingroup bias hypothesis (Sidanius & Pratto, 1999). The behavioral asymmetry hypothesis posits that ingroup favoritism will be stronger among dominant subgroups than among subordinate subgroups (Sidanius & Pratto, 1999). Moreover, asymmetrical ingroup bias can result in outgroup favoritism (i.e., preference for the outgroup over the ingroup) for subordinates. Although SDT has been deeply influenced and inspired by the development of social identity theory as well as its derivatives (Tajfel, 1978; Tajfel & Turner, 1986; Brewer, 1979; Brewer, 1991), where ingroup favoritism was repeatedly found across the studies, such a behavioral asymmetry hypothesis is unique to SDT. Additionally, social dominance theory proposes that the legitimacy of social hierarchy can be endorsed, and those legitimizing ideologies can be consensually held across both the dominant groups and subordinate groups (Sidanius et al., 2004). For example, team members may share knowledge and beliefs that the unequal
allocation of resources is acceptable in teams; some members who are seen more prestigious are entitled to greater rewards (Sidanius et al., 2004).

Therefore, SDT has two implications for studying resource-based subgroups in work teams. First, because team members possess unique power or status-related characteristics that reflect one’s place in the social hierarchy (Magee & Galinsky, 2008), teams are likely to be divided into dominant subgroups and subordinate subgroups (Carton & Cummings, 2012). Due to the pervasiveness of inter-subgroup oppression (Sidanius, 1999), as well as the potential negative effect of group faultlines on group processes and outcomes (Lau & Murnighan, 1998), such a situation may become a huge hurdle to the successful accomplishment of team tasks. However, by using the rationale drawn from SDT that group-based hierarchy can be legitimized across both the dominant and subordinate subgroups (see above), I have come to the belief that when group faultlines are based on resource differentials, clear faultlines should not be detrimental to group outcomes. Second, the behavioral asymmetry hypothesis explicitly stresses the different effects of power or status differentials on different subgroups. Therefore, the pattern of social interactions within and between resource-based subgroups is likely to differ from those that occur under conditions of identity-based or knowledge-based subgroups (Carton & Cummings, 2012).

Resource-Based Subgroups: Operationalization

In this research, I do not restrict my study population to any type of team based on their functions (e.g., functionally homogeneous versus functionally diverse) or to any specific context or industry, but conform to Carton and Cummings’s (2012) generic theory of subgroups. However, it should be noted that self-managing teams (Manz &
Sims, 1987) are excluded for the following reason. To observe resource-based subgroups, team members must possess attributes that can potentially trigger resource-based subgroup faultlines. Carton and Cummings (2012), in developing a theory of subgroups in work teams, argued that although all three types of faultlines (i.e., separation, variety, and disparity) (Harrison & Klein, 2007) may trigger resource-based subgroups, disparity-based faultlines are mostly related to the formation of resource-based subgroups because the nature of those disparity attributes (e.g., status, decision-making authority, and power) represents socially valued resources (Harrison & Klein, 2007). In addition, when organizations place a strong premium on variety-based attributes (often task-related, such as experience) and thus use such characteristics to determine power and status differentials, variety-based faultlines may consequently trigger the formation of resource-based subgroups (Carton & Cummings, 2012). Therefore, resource-based subgroups may be more discernable in traditional teams than in self-managing teams.

In this research, I mainly consider the disparity attributes (i.e., decision-making authority, status, and power) that team members possess as the basis for the formation of resource-based subgroups. This operationalization is consistent with the classification of Foa (1971), wherein status (broadly defined as “an expression of evaluative judgment, which conveys high or low prestige, regards, and esteem”; Foa, 1971: 346) is considered a type of social resource. Subgroup faultline strength, therefore, represents the extent to which multiple disparity attributes align themselves in the same way and produce the same split or subgrouping of a team.

Three resource-related attributes are identified and examined in this study, namely, managerial position, the quality of leader-member exchange (Dansereau, Graen, & Haga,
1975; Graen, Novak, & Sommerkamp, 1982), and organizational tenure. First, the existence of resource-based subgroups has been argued to occur when a clear hierarchy is already in place (Carton & Cummings, 2012). Team members who play certain managerial roles, compared with those who do not, typically have higher authority and stronger legitimate, reward, and coercive power (French & Raven, 1959) to make decisions and influence others. Consequently, the managerial position a member possesses in his or her team serves as the first disparity attribute, which subsequently becomes the basis for the possible formation of resource-based subgroups. Second, Binning and Huo (2012) argued that some types of status are symbolic, such as acknowledgement and standing; and that other types of status are concrete, such as title and relative position. Within the leadership literature, LMX research has suggested that leader-subordinate dyads can develop differentiated relationships. Subordinates, by committing themselves to higher degrees of work involvement, can receive valuable resources from their leader (Scandura & Graen, 1984). Leaders who offer favorable outcomes are further reciprocated by greater availability and commitment of subordinates. In work teams, the quality of such exchange can vary dramatically across different leader-subordinate dyads, resulting in dyads with lower-quality LMX (i.e., out-group members) and dyads with higher-quality LMX (i.e., in-group members). High-quality LMX, based on the framework of Binning and Huo (2012), can be understood as a type of symbolic status granted by the leader; thus, high-quality LMX can be employed as the second individual disparity attribute that contributes to the formation of resource-based subgroups. Finally, one concrete status attribute that an individual team member possesses is organizational tenure, which is defined as the length of employment in an
organization (Ng & Feldman, 2010). Although longer tenure does not necessarily suggest higher level in a hierarchy, the seniority of an individual member (in terms of the accumulated years of organizational service) may imply his or her status or authority relative to that of other team members (Harrison & Klein, 2007). Additionally, organizational tenure is often related to experience (Chung et al., in press). Organizations using experience as a criterion to allocate resources are not uncommon. Therefore, organizational tenure is used as the third individual attribute that serves as a basis for the formation of resource-based subgroups.

The Effect of Subgroup Faultline Strength

In the following sections of this chapter, I attempt to bridge the two main themes of this dissertation and analyze how the presence of resource-based subgroups influences team relational harmony. According to the definition of group faultlines and my operationalization of resource-based subgroups, a team may be split into two or more subgroups according to the alignment of three resource-related individual attributes (namely, managerial position, LMX, and organization tenure) across team members. As an example, I compare the strengths of subgroup faultlines in two hypothetical four-person teams (denoted as A, B, C, and D) (shown in Figure 2). It has been argued that teams must have at least four members to have two or more subgroups (Carton & Cummings, 2012), and this number has been used frequently to illustrate the notion of faultlines (e.g., Lau & Murnighan, 1998). In my discussion of team composition, in line with extant research on faultlines and subgroups (e.g., Carton & Cummings, 2013), I only consider the composition of team members (i.e., those individuals who are under the supervision of the same team leader) but not the team leader. In the first team, A and B
occupy managerial positions, have high LMX, and have long organizational tenure; whereas C and D do not occupy managerial positions, have low LMX, and have short organizational tenure. In the second team, A and B occupy managerial positions and have long organizational tenure; whereas C and D do not occupy managerial positions and have short organizational tenure. In addition, A and C have high LMX, whereas B and D have low LMX. It is worth mentioning that based on a study by Berger and Fisek (1970), a “combining” mechanism will operate in forming perceptions and expectations for self and others when there are differences among team members with respect to two or more status characteristics. Specifically, team members would combine all available status-related characteristics and make an “average” evaluation of themselves and others. Therefore, the resource-based subgroup faultline is stronger in the first team than in the second because of the division of team members into two subgroups (i.e., A&B and C&D). Through such a division, members in each subgroup in the first scenario would be more homogeneous, and a clear dominant subgroup (i.e., A&B) and a clear subordinate subgroup (i.e., C&D) will appear.

Status determines evaluations of team members and, consequently, the distribution and exchange of participation (Berger, Cohen, & Zelditch Jr, 1972). Holding everything else constant, which team is more likely to have higher relational harmony? The application of social dominance theory (Sidanius & Pratto, 1999) suggests that a hierarchical structure can be consensually endorsed by both dominant and subordinate subgroups. When the faultline is strong (e.g., Team 1 in Figure 2, where members A and B share exactly the same characteristics, and members C and D share exactly the same characteristics), a group-based (in this case, the unit of such a “group” is subgroup) social
hierarchy is salient. Such a group-based hierarchy will be viewed favorably by members in the dominant subgroup (i.e., members A and B) because doing so helps them maintain a sense of positive self-concept (Sidanius et al., 2004). Additionally, members in the subordinate subgroup (i.e., members C and D) will tend to also endorse this group-based hierarchy to justify such an inequality in the team. These members may even develop outgroup favoritism (Sidanius & Pratto, 1999). In contrast, when the faultline is weak, some members may or may not be categorized into a dominant (or a subordinate) subgroup. For example, in the second team of the Figure 2 example, the subgroup membership of members B and C is debatable. Such inconsistent patterns may lower the status of B while elevating that of C. Thus, group-based hierarchy has become less clear, resulting in confusion among individual team members regarding their respective standings in a team.

A strong resource-based faultline situation may bring several benefits to team relational harmony. In this regard, I reiterate that team relational harmony reflects the extent to which all team members mutually accept each other’s uniqueness (i.e., mutual acceptance) while serving the best interests of each member or those of the collective (i.e., mutual benevolence). In the presence of subgroups, mutual acceptance denotes the situation where no one tries to dominate or change others or the situation of others as a person, no matter whether the other party is from one’s own subgroup or from other subgroups. Similarly, mutual benevolence suggests that all team members, regardless of their subgroup membership, are acting beneficially toward each other. First, as resource-based subgroup faultlines become stronger, the group-based hierarchy is more likely to be legitimimized (Sidanius et al., 2004). Based on SDT (Sidanius & Pratto, 1999), the
clearly defined subordinate subgroups may even develop favoritism toward the dominant subgroups. Second, resources in teams can exist in different forms. It is possible that members of one subgroup have greater access to certain resources whereas those of other subgroups may have better capacities to claim other resources. This scenario increases the complexity of the interactions between different subgroups. I posit that when the alignment of different resource-related characteristics achieves its maximum value (i.e., the faultline is strongest), the members in each subgroup can more readily utilize their possessed resources, making the mutual exchange of acceptance and benevolence (the key notions of team relational harmony) more feasible. To the contrary, as subgroup faultlines become weaker, subgroups or coalitions are less likely to form (Mannix, 1993), reducing the chances for team members to capitalize on the group-based resources pool or to develop mutually beneficial exchanges using their own subgroup’s possessed resources.

Therefore, I hypothesize that:

*Hypothesis 1: The strength of resource-based subgroup faultlines is positively related to team relational harmony.*

**The Effects of Subgroup Configurational Properties**

Faultlines determine the plausible boundaries between subgroups: Strong faultlines depict clear boundaries and weak faultlines suggest less discernable boundaries. Depending on where faultlines locate, faultlines also define how subgroups are configured in terms of the number of subgroups and variation in the size of subgroups (the balance of subgroups or subgroup balance, hereafter) (Carton & Cummings, 2012).
Research has suggested that the configuration of subgroups matters in influencing team processes and team outcomes (Mannix, 1993; Carton & Cummings, 2013). The number of subgroups is critical because, in a general sense, the strongest tension would exist in a two-subgroup scenario (Lau & Murnighan, 1998). This idea is based on social identity theory (Tajfel, 1978) and has received strong empirical support when the subgroups are split primarily based on identity-related attributes (Hartstone & Augoustinos, 1995; Polzer, Crisp, Jarvenpaa, & Kim, 2006; Carton & Cummings, 2013). Specifically, such a configuration yields a strong “us versus them” mindset for each team member and is likely to engender favoritism toward the in-group and prejudice toward the out-group (Carton & Cummings, 2013). It should be noted that the existence of subgroups does not imply a division of a team into two teams, as long as task interdependence within the team remains unchanged (Guzzo & Dickson, 2006). Subgroup identification, therefore, should be especially strong, inducing competition between the two subgroups. For instance, it has been found that teams with two co-located subgroups experience more conflict and less trust than three-subgroup teams (Polzer et al., 2006) and that teams with two subgroups (based on age and gender) perform worse than teams with any other number of subgroups (Carton & Cummings, 2013). In contrast, when subgroups emerge based on information or knowledge-related attributes, alternative outcomes may occur. According to the tenets of the information processing perspective (Tushman & Nadler, 1978; Hinsz et al., 1997), as the number of knowledge-based subgroups increases, there will be a wider base of knowledge to draw upon to perform tasks that require a great deal of creativity (Carton & Cummings, 2012, 2013).
However, it is less clear how the number of resource-based subgroups affects team functioning, let alone team relational harmony. Carton and Cummings (2012) have reasoned that among teams with two or more resource-based subgroups, an increase in the number of subgroups may lead to a decrease in asymmetry in perceptions of fairness. This is because in a two-subgroup scenario, the dominant subgroup usually justifies the status quo whereas the subordinate subgroups may perceive that the distribution of resources is unfair, resulting in the strongest justice perception asymmetry. When the number of subgroups increases, experiences of such asymmetry will decrease (i.e., members of subordinate subgroups are no longer feel strongly and unfairly disenfranchised due to their lack of status; rather, coalitions may form to acquire resources; Carton & Cummings, 2012). Moreover, in teams with only two rather than more resource-based subgroups, power is more likely to be centralized within the dominant subgroup. Although the subordinate subgroup may be able to justify the existence of a group-based hierarchy, (Sidanius & Pratto, 1999), it is not as favorable as when there exist more than two subgroups and when power and resources are more dispersed (fragmentarily distributed).

With the above being said, an immediate increase in the number of resource-based subgroups from two to three brings considerable benefits for the subordinate subgroup members. It also reduces the possibilities of resentfulness or dissatisfaction among those subordinate subgroup members (Carton & Cummings, 2012). Nevertheless, how this situation benefits the social exchange within a team as a whole has received little research attention. I now present rationale in support of an inverted U-shaped
curvilinear relationship between the number of resource-based subgroups and team relational harmony.

It should be reemphasized that relational harmony represents a balance in social exchange characterized by mutual acceptance and benevolence. Harmony can be understood as the equilibrium achieved by the regulation of a variety of social resources. It has been argued that groups maintain solidarity when their social exchange is of a “generalized” type (i.e., a given party does not reciprocate an exchange directly with the giver of the resource but someone else from the same group; Gillmore, 1983). Such a generalized social exchange is more likely to occur in a three-subgroup, instead of two-subgroup team (of course, a three-subgroup structure would not exist in teams of only four-members). As an example, when a powerful person (e.g., a senior prestigious member) treats someone who belongs to a lower-status subgroup favorably, it is considered status transference and will enhance this member’s social standing (Earley, 1997). However, the recipient of such a favor is not without debt. In a generalized social exchange context, this person may reciprocate by providing benefits to members from the lowest-status subgroups. It is apparent that these members, sooner or later, will also reciprocate by doing favors to those members at the top. Relational harmony in the team, from virtually all subgroup members’ perspectives, is thus likely to be ensured. However, is more subgroups always better? When the number of subgroups exceeds a certain point, an increase in perceptions of unfairness may occur (Carton & Cummings, 2012) for members of those subordinate subgroups because resources are too fragmented to allow every single individual to gain power or status. Additionally, perceptions of a glass ceiling effect (Cotter, Hermsen, Ovadia, & Vanneman, 2001) may become strong such
that members in the disadvantaged subgroups will feel helpless in achieving certain power- and status-related personal goals. Third, as teams split into a greater number of resource-based subgroups, it is also likely that members cannot readily form effective coalitions to achieve instrumental goals. This condition violates the hierarchy-based norms of organizing (Sidanius & Pratto, 1999) and may hamper the effective use and transference of resources (Earley, 1997). Interpersonal competitions may increase to compete for resources until equilibrium is regained. Last but not least, the emergence of a large number of subgroups makes one’s subgroup identity more salient. Individuals, when comparing themselves with members of other subgroups, can observe their own uniqueness along a variety of dimensions that determine their standings. Such a configurational structure not only makes one’s subgroup identity more salient but undermines the superordinate team identity, a critical condition for maintaining team harmony (Hornsey & Hogg, 2000a).

Therefore, I predict that:

*Hypothesis 2: The number of resource-based subgroups has an inverted U-shaped curvilinear effect on team relational harmony.*

As mentioned earlier, a second configurational property is subgroup balance, defined as subgroups being equal in size. In teams where resource-based subgroups are extremely unbalanced in size, the most plausible condition is that only a few members possess most of the resources and, thus, team operations tend to flow through these numerical minority yet dominant members (Carton & Cummings, 2012). Such a configuration causes the power structure of the team to be highly centralized (Carton & Cummings, 2012), resulting in more efficient and more frequent exchanges of resources
only within the dominant subgroups (but not the subordinate subgroups) (Mannix, 1993). As the configuration of subgroups becomes more balanced, power is decentralized (Carton & Cummings, 2012). This situation may be achieved by imposing an external force, which allows some of the subordinate subgroup members (who are lower in status or of less power) to elevate their status or gain power, such as receiving an endorsement from a higher-ranked leader (Binning & Huo, 2012) or adding a powerful individual to balance the resource disparity. Either way, any asymmetry in justice perception will be reduced (Carton & Cummings, 2012). The subordinate subgroup members will legitimize the fact that the team is hierarchically structured according to team members’ social standings (Sidanius & Pratto, 1999) while not feeling ostracized because they also have a number of peers in their own subgroups (Robinson, O’Reilly, & Wang, 2013). Those who are in the dominant subgroups are no longer the numerical minority who possess most of the resources. Instead, they may act in the forms of respecting individuality and personal distinctiveness, providing help and support, and maximizing the resource pool for the whole team (Mannix, 1993). Team relational harmony will be achieved as interactions within a team are now characterized by mutual understanding of each other’s situation and acting/reacting in a benevolent manner (Earley, 1997).

Thus, I hypothesize that:

*Hypothesis 3: The balance of resource-based subgroups is positively related to team relational harmony.*

The Moderating Role of Leader Interaction Facilitation Behavior

It should be noted that the configurations of subgroups described above are determined by the hypothetical alignment of different attributes. Similarly, my
predictions of the effects of subgroup configurational properties are based on the assumption that team members, implicitly or explicitly, are able to perceive the existence of such faultlines and thus subgroups. However, recent research has challenged this assumption by proposing that dormant faultlines must be activated to exert an effect (Pearsall et al., 2008; Jehn & Bezrukova, 2010). Some contextual factors may trigger or suppress the activation of dormant group faultlines and, therefore, strengthen or alleviate the effects associated with faultlines. For example, Chung and colleagues (in press) found that a supportive diversity climate (defined as shared perceptions among team members that people are treated fairly and are integrated into the work environment regardless of background) reduces the negative consequences associated with gender faultlines and increases the positive effect associated with function faultlines. Chung et al. explained that this is because diversity climate helps alleviate tensions among team members, thereby making gender-based subgroups less salient. In the meanwhile, diversity climate also facilitates information elaboration and resource sharing among team members; thus, maximizing the benefit of having multiple functionality-based subgroups. Moreover, even when faultlines have been activated and subgroups have been formed, the negative effects associated with subgroup formation can still be mitigated by a high level of cognitive integration, which is defined as the ability of team members to incorporate the perspectives of other team members (Todorova & Weingart, 2009) into that of the team (Cronin et al., 2011). Such a growing interest in the boundary conditions of subgroup effects has paved the way for my subsequent hypotheses development.

Among the many contextual factors, leaders exert influence on team interaction probably more than any other single individual (Sherif & Sherif, 1953). Leaders have
access to more resources and a better understanding of organizational objectives and team goals. They also influence how members interact with each other by shaping interaction norms (Carton & Cummings, 2013) and developing differentiated relationships with team members (Gooty & Yammarino, in press). It should be noted that by assessing the role of leadership, this research focuses on understanding the management of teams where there is an appointed formal leader. Thus, self-managing teams (whose leadership may come from the outside of the team; Manz & Sims, 1987) are excluded from consideration.

Many theoretical perspectives have been proposed to model leadership phenomena. Based on a literature review (Lowe & Gardner, 2001; Gardner, Lowe, Moss, Mahoney, & Cogliser, 2010), Antonakis and his colleagues (2014) classified schools of leadership into nine categories: (1) trait, (2) behavioral, (3) contextual, (4) contingency, (5) relational, (6) information processing, (7) new leadership (including transformational, charismatic, ethical, authentic, and visionary), (8) biological and evolutionary, and (9) hybrid (research that included more than one leadership theoretical perspective or the theoretical perspective did not belong to one of the aforementioned theories). Despite fruitful knowledge created by each school of leadership, the behavioral and contingency approaches are in decline (Day & Antonakis, 2012). Specifically, the behavioral approach to leadership focuses on studying different behavioral styles of leaders as well as the effectiveness of those behaviors (Hemphill, 1950). The contingency approach seeks to identify how situational demands affect the impact of behavioral styles (House & Mitchell, 1974). Additionally, many leadership researchers have often overlooked the issue of level of analysis when developing, operationalizing, and testing their theoretical models (Schriesheim, Cogliser, & Neider, 1995). For example, it is very problematic if an
attempt to examine “group-oriented” leadership is coupled with the measurement of leadership using individual-directed leader behaviors (Schriesheim et al., 1995).

Since the current research involves investigating the role of leadership in the relationship between team configuration and team relational harmony, a team-oriented leadership approach that focuses on the relational aspect of team management should be employed. The behavioral approach to leadership has proposed a suitable type of leader behavior, namely, interaction facilitation (Bowers & Seashore, 1966). Such behavior encourages members of the group to develop close and mutually satisfying relationships by encouraging communication and reducing conflicts (Taylor, 1971). The earliest similar notion dates back to the 1950s, when the Ohio State Leadership Studies developed a typology of leader behaviors. One of the nine behavioral dimensions identified is integration, which is defined as acts that tend to increase cooperation among members or decrease competition among them (Hemphill, 1950; Hemphill & Coons, 1957). The elements contain the (a) frequency with which a leader subordinates individual behavior, (b) leader’s encouragement of a pleasant group atmosphere, (c) leader’s reduction of conflicts between members, and (d) leader’s promotion of individual adjustment to the group. This line of research evolved, and a four-factor theory of leadership (Bowers & Seashore, 1966) was developed, in which behaviors that focus on structuring communication among group members, encouraging a pleasant group atmosphere, and reducing conflicts among members (Halpin & Winer, 1957) were renamed as “interaction facilitation behaviors.”

Surprisingly, team leadership research has not paid sufficient attention to this particular behavior despite the observation that by encouraging interactions in the team,
leaders are able to connect or bridge team members across different subgroups. When leaders hold group meetings to openly discuss work or non-work-related issues, they play an important role in helping team members understand what others think without necessarily thinking or feeling the same way. Hence, members will more likely pursue ways to accommodate differences across different subgroups while developing more accepting relationships. However, the general absence of such leadership behaviors may result in a significant amount of unprocessed misunderstandings among team members and even resentfulness across different factions (Barry, 1991).

In addition, the more leaders engage in interaction facilitation behaviors, the more likely that resources can be equally shared and rewarding activities can be exchanged across different resource-based subgroups. Thus, teams working within a more favorable atmosphere for interactions as facilitated by the leader reinforce positive reciprocity and enhance mutual benevolence among the team members.

Therefore, I contend that leader interaction facilitation behavior offsets the negative effect of the number of resource-based subgroups on team relational harmony when the number of resource-based subgroups is from moderate to large—when resources are dispersed (fragmentarily distributed) in the team. On the contrary, if leaders do not facilitate team interactions sufficiently to suppress the activation of resource-based faultlines, an increase in the number of resource-based subgroups will have a greater effect to decrease team relational harmony, as discussed above. Notably, such a suppression effect may only occur when the number of resource-based subgroups is from moderate to large because more resource-based subgroups are considered less favorable only under such circumstances (i.e., the right side of the inverted U-shaped curvilinear
relationship posited in Hypothesis 2). When the number of resource-based subgroups is from small to moderate (i.e., the left side of the inverted U-shaped curvilinear relationship posited in Hypothesis 2), a positive effect of the number of resource-based subgroups on team relational harmony has already occurred. The suppression effect of leader interaction facilitation behaviors (in weakening the negative effect of the number of subgroups) is thus irrelevant.

Based on the above rationale, I predict that:

*Hypothesis 4: Leader interaction facilitation behavior moderates the inverted U-shaped curvilinear relationship between the number of resource-based subgroups and team relational harmony such that the inverted-U relationship is weaker in teams where leaders are high on interaction facilitation behavior.*

By the same token, leader interaction facilitation behavior is important in dealing with the issue of fairness in teams when resource-based subgroups are unbalanced in size. Leaders demonstrating interaction facilitation behavior to a great extent signal equal opportunity for all members in terms of having a say with regard to team issues. As long as all team members are given sufficient opportunities to contribute ideas and express concerns, without having a subset of group members dominating the discussion or team decision making (Barry, 1991), balance in size among the resource-based subgroups becomes less of a concern. Substitutes for leadership theory (Kerr & Jermier, 1978) argued that some group factors will make leadership’s effect less potent and, visa-versa, when a leadership is very high, those group factors can be substituted. Therefore, team members may not need to gain a sense of inclusion or fairness through a balanced
configuration of resource-based subgroups. Leader interaction facilitation behavior alone may ensure that team relational harmony stays uniformly high.

I thus predict that:

*Hypothesis 5: Leader interaction facilitation behavior substitutes for the positive effect of the balance of resource-based subgroups on team relational harmony such that teams where resource-based subgroups are more balanced in size have higher relational harmony only when leader interaction facilitation behavior is low.*

**Impacting Team Performance Through Team Relational Harmony**

I have thus far theorized how resource-based subgroups impact team relational harmony. The next critical question is whether harmonious team interactions characterized by mutual acceptance and benevolence translate the above effects associated with resource-based subgroups to impact team performance. Prior research has provided ample evidence to support positive relationships between group cohesiveness and group performance (Hogg, 1993; Mullen & Copper, 1994; Beal, Cohen, Burke, & McLendon, 2003), suggesting that positive social integration in a group is beneficial for group performance. It is logical to speculate that team relational harmony, with its proximity to team cohesiveness in the sense that both imply positive social integration, can also contribute to team performance. However, research has suggested that cohesiveness may cause groupthink (defined as a psychological drive for consensus at any cost that suppresses dissent and appraisal of alternatives in cohesive teams; Janis, 1972; Mullen, Anthony, Salas, & Driskell, 1994), which may lead to poor decisions. Team relational harmony, with its emphasis on tolerance of differences and acceptance of
team members’ individuality, in fact supports dissent and thus should not be associated with symptoms of groupthink.

Research has also shown that harmony has intrapsychic benefits for individuals because harmony is beneficial for psychological well-being, positive moods, and self-esteem (Lun & Bond, 2006). Harmony is even more important for teams because the successful accomplishment of team goals depends on all the team members’ collective and synchronized effort. It has been argued that harmony is a necessary or at least a facilitating condition for successful team performance (Lun & Bond, 2006). Disharmony, especially that caused by the negative consequences associated with resource-based subgroups, will divert team members’ attention to refocus on justifying group-based hierarchy, dealing with inequity, and balancing social exchange among team members, all of which are at the expense of successful task accomplishment.

I have so far developed theoretical rationale underlying the relationship among subgroup configuration, leadership behaviors, and team relational harmony, as well as that between team relational harmony and team performance. Next, theoretical reasoning in support of moderated indirect effects (i.e., leader interaction facilitation behavior moderates the indirect effects of resource-based subgroup configuration on team performance through team relational harmony) should be established. By doing so, this research will have the potential to shed light on the nuanced mechanisms through which resource-based subgroups affect team performance.

**The number of resource-based subgroups.** It has been found that in teams where resources are not distributed equally, a three-party interaction scenario is more effective than a two-party one (Gillmore, 1983). Such a finding is primarily based on a power-
balancing explanation and does not indicate why an equal distribution of power benefits team performance. I argue that this is because in a two-party interaction scenario, a direct exchange structure usually emerges (i.e., every transaction will be reciprocated immediately to foster a general sense of indebtedness; Ekeh, 1974; Gillmore, 1983). Numerous researches have argued that team performance benefits from having a generalized social exchange (Harrison, Price, Gavin, & Florey, 2002) instead of a restricted and direct one. Therefore, it is expected that the number of resource-based subgroups has a significantly positive instantaneous effect on team performance through team relational harmony when the number of subgroups increases from two to three. Additionally, I posit that such an effect is only pronounced when the resource-based faultlines are clearly activated or at least not suppressed. Thus, I propose that when leaders demonstrate a high level of interaction facilitation behavior, such an instantaneous indirect effect is less likely to be seen. Similar logic could apply in predicting the relationship between the number of resource-based subgroups and team performance when the number of subgroups has passed a certain point. Since only the activated group faultlines make a large number of subgroups undesirable for team relational harmony, it can be speculated that only when leaders do not facilitate team members’ interaction sufficiently, the instantaneous indirect effect of the number of subgroups on team performance through relational harmony becomes negative and significant as the number of subgroups becomes larger.

**The balance of resource-based subgroups.** By the same token, the effect of balance of resource-based subgroups on team performance should also be contingent upon the level of leader interaction facilitation behavior. Subgroup balance should matter
most for ensuring team performance when the team leader is considered a bad example in bringing team members together and facilitating mutual understanding within the team, a condition that would likely tend to activate group faultlines (Chrobot-Mason, Ruderman, Weber, & Ernst, 2009). In other words, high leader interaction facilitation behavior, due to its ability to suppress faultline activation, may substitute for the positive effect of subgroup balance, making the indirect effect of the balance of subgroups on team performance through team relational harmony less potent.

Taken together, I hypothesize that:

_Hypothesis 6: Team relational harmony translates the above moderated curvilinear effect of the number of resource-based subgroups and leader interaction facilitation behavior to team performance, such that when leaders are high on interaction facilitation behavior, the indirect inverted U-shaped curvilinear relationship is weaker._

_Hypothesis 7: Team relational harmony translates the above interaction effect between the balance of resource-based subgroups and leader interaction facilitation behavior to team performance, such that when leaders are low on interaction facilitation behavior, the indirect relationship is stronger._

As presented in Chapter 1, schematics of the hypothesized model are shown in Figure 1. Table 1 summarizes these hypotheses and provides illustrative examples pertinent to the hypothesized relationships.
CHAPTER 4

SCALE DEVELOPMENT FOR RELATIONAL HARMONY

Background

No prior research has systematically operationalized the concept of relational harmony. In research that has attempted to assess relationship harmony, researchers have typically asked a subject directly the extent to which a relationship is harmonious (Kwan et al., 1997; Lun & Bond, 2006; Chuang, 2005; Chen et al., 2006; Banker & Gaertner, 1998). For example, Kwan et al. (1997) proposed the construct of relationship harmony as a predictor of life satisfaction and as a construct that carries a different meaning from a satisfying relationship. They defined relationship harmony as the balance achieved in relationships (Kwan et al., 1997: 1039), and differentiated a harmonious relationship from a satisfying relationship. They argued that one may consider his or her relationship with others as satisfying simply because there is no expectation for that relationship or social requirements to make it work. Therefore, a satisfying relationship may not contribute to one’s life satisfaction as well as the construct of relationship harmony does. They operationalized relationship harmony as the extent to which harmony characterizes an individual’s two-person relationship. The participants were asked to rate the degree of relationship harmony with the five most important relationships in their lives, using a 7-point Likert-type scale (ranging from 1 = very low, to 7 = very high). Then, a total relationship harmony index was computed as the mean of the five relationship harmony scores.
Lun and Bond (1996) examined the effect of relationship harmony on group performance in student groups in a social psychology class. They assessed relationship harmony by asking group members to rate their relationships between a group member and themselves concerning the level of harmony in their relationship. A 7-point Likert scale, ranging from “1 = very low” to “7 = very high”, was used. A self-given relationship harmony index was computed by averaging the scores of relationship harmony that an individual gave to his or her group members, and a peer-given relationship harmony index was computed by averaging the scores of relationship harmony that an individual received from his or her group members. Chuang (2005) assessed family harmony by asking the family member “as a whole, how well does your family get along?” The response categories ranged from very harmonious to very inharmonious. Finally, Banker and Gaertner (1998) used four statements to assess stepfamily harmony: “Generally, there is a feeling of contentment in my house” (arguably measuring satisfaction, not harmony), “There are rarely any disagreements in my house” (arguably measuring lack of conflict, not harmony), “I would characterize the environment at my house as harmonious,” and “Overall, there is more harmony in my house than discontent.” Participants indicated their agreement with these statements using a 7-point Likert scale ranging from “1 = not at all” to “7 = very much.”

As reviewed earlier, harmony encompasses a wide range of meanings and can be conceptualized as involving values, motives, or regulation processes. Relational harmony could also differ qualitatively as either superficial or genuine (Leung et al., 2002). Therefore, it is very likely that the term harmony is construed differently in different people’s minds. With a single-item measure, researchers may run the risk of capturing
entirely different content domains when a survey is administered to different subjects. Additionally, the few multi-item measures (such as Banker and Gaertner’s, mentioned above) appear to have content validity concerns. Therefore, to better assess relational harmony, a new multiple-item instrument that more closely corresponds to the construct’s theoretical definition is needed.

Item Generation

Content validity, defined as the extent to which a measure’s items reflect a particular theoretical content domain (Kerlinger & Lee, 2000), is the primary concern in item generation, and it is the first step in construct validation of a new measure (Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993; Hinkin, 1995). Specifically, items should adequately capture the specific content domain of a construct while containing no extraneous content (Hinkin, 1995). The development of the initial items typically employs one of the two approaches: A deductive approach and an inductive approach. A deductive approach is used when there is an understanding of the phenomenon to be studied, a thorough review of the literature, and a clear theoretical definition of the construct. The definition is then used to guide the development of items (Schwab, 1980; Hinkin, 1995). In contrast, an inductive approach is used when there is little theory involved. A sample of respondents is asked to describe their feelings about a particular phenomenon (Hinkin, 1995) and these statements will serve the bases for the generation of new items.

I argue that a deductive approach to the development of a scale for relational harmony is preferred. The advantage of the deductive approach is that it will help to assure content validity in the final scale (Hinkin, 1998). Although it requires the
possession of a working knowledge of the phenomenon of relational harmony and thus could be very time-consuming (Hinkin, 1998), it is clear that my detailed conceptualization and definition of relational harmony (based on a thorough review of the literature and theories in Chapter 2) provided sufficient information to generate an initial set of items. Such information includes the theoretical definition of relational harmony (i.e., the coexistence of two or more entities in a state of mutual acceptance and benevolence), with an emphasis on the four defining elements (i.e., coexistence, mutuality, acceptance, and benevolence). Specifically, my definitions of mutual acceptance (i.e., the extent to which neither entity tries to dominate or change the other or the other’s situation) and mutual benevolence (i.e., the extent to which both entities are disposed to or actually act beneficially toward each other) can be used to generate items to assess the broader construct of relational harmony.

I followed Hinkin’s (1998) scale development guidelines. The first step is to write items. Criteria for writing items are as follows (Hinkin, 1998: 107-108):

1. Statements should be simple and as short as possible, and the language used should be familiar to target respondents.
2. All items need to be kept consistent in terms of perspective (e.g., not mixing items that assess behaviors with items that assess affective responses).
3. Items should address only a single issue and “double-barreled” items should be avoided.
4. Leading questions should be avoided, as they may bias responses.
5. Items that all respondents would answer similarly should be avoided as they generate little variance.
6. Reverse-scored items should be only carefully used.

Based on my definition of relational harmony (the coexistence of two or more entities in a state of mutual acceptance and benevolence) and prior measures summarized above (e.g., Kwan et al., 1997; Lun & Bond, 2006; Chuang, 2005; Chen et al., 2006; Banker & Gaertner, 1998), I generated 14 items, 8 tapping the content domain of mutual acceptance, 5 mutual benevolence, and 1 general description of a relationship as being harmonious. These items are presented here to facilitate reading but can be also found in Appendix A.

*Mutual acceptance*

1. We are tolerant of each other
2. We accept each other’s unique or idiosyncratic characteristics
3. We allow each other to hold our own unique opinions and perspectives
4. We both try to accept the other party’s point of view
5. We are considerate of the other party’s difficulties
6. We give in on arguments rather than risk making the other party mad
7. We let each other show our own individuality
8. We are considerate of each other’s situation

*Mutual benevolence*

9. We stand up for each other
10. We try to benefit rather than harm each other
11. We prioritize the other party’s goals
12. We make sure that one party’s work behavior does not hurt the other party’s well-being
13. We take into account the other party’s welfare when making decisions that may affect the other party

*General description*

14. I would describe the relationship between us as harmonious

The referent used in all the items was “we” (except for the last one, which has a referent of “the relationship between us”), and could refer to any relationship involving two or more individuals, such as two coworkers, a leader and a subordinate, and a group. All of the items are simple, are consistent in terms of perspectives (i.e., cognition or perceptions), address only a single-issue, are stated without being leading, can readily create variance, and are not reverse-scored, thus satisfactorily meeting the requirements advocated by Hinkin (1998).

**Study 1: Content Adequacy Assessment**

The above 14 items were subjected to a content adequacy assessment (Schriesheim et al., 1993) with the judge panel ANOVA approach suggested by Hinkin and Tracey (1999). The purposes of this assessment are to (1) quantitatively establish theoretical discriminant validity when developing a new scale, and (2) delete items that are not sound representations of a construct’s theoretically-defined content domain before they are used in a research study (Schriesheim et al., 1993; Hinkin & Tracey, 1999). According to Hinkin and Tracey (1999), this ANOVA approach has several advantages. First, it provides a direct empirical test for determining item distinctiveness. Second, this technique can be used with small sample sizes. Third, the analysis is simple and straightforward as it involves only ANOVA and planned t-tests (to compare the mean item ratings across different dimensions or theoretical constructs).
With this ANOVA approach to content validation, I intended to not only retain items from the initial item pool to ensure the content validity of a new measure, but also establish theoretical discriminant validity (Liu, 2014) to avoid construct proliferation in the management literature (Colquitt & Zapata-Phelan, 2007). Specifically, this was achieved by comparing the mean item ratings across three theoretical constructs (i.e., a total of four dimensions): mutual acceptance and mutual benevolence, intragroup relationship conflict (Jehn & Mannix, 2001), and group cohesiveness (Podsakoff & MacKenzie, 1994). The latter two constructs, relationship conflict (the opposite of harmony on the surface) and cohesiveness (seemingly related to harmony because both imply “unity”) were chosen because in order to assert that relational harmony is a new construct, evidence about its conceptual distinctiveness from others needs to be shown.

Eighteen management professors and senior PhD students² (all of whom were deemed subject matter experts) comprised the judge panel. Their ages range from 24 to 41, with an average of 28.3. 10 of them are female. 2 of them are Caucasian, and the rest are Asian. 11 of them are working or studying in the US or Europe, 3 in Hong Kong, 1 in Singapore, and 3 in Mainland China. 2 of them are tenure-track faculty, and the rest are PhD candidates. Although the native language of most of these participants is not English, all of them have demonstrated a high level of professional expertise in this field, including publishing in premium journals in English, presenting research in international conferences, and teaching management courses in English.

² I thank the following people who have contributed to this content adequacy assessment: Xiaoyun Cao, Zhonghua Gao, Wei He, Mia Huai, Lei Huang, Zhenyu Liao, Edward Lu, Ke Mai, Monica Sharif, Rui Shu, Cass Shum, Danni Wang, Jiexin Wang, Juanita Woods, Junfeng Wu, Tao Yang, Yingjie Yuan, and Lida Zhang.
First, these subject matter experts read the definitions of relational harmony, intragroup relationship conflict, and group cohesiveness (see Appendix B for the survey). Then, they were asked to evaluate the extent (ranging from 1 = not at all or almost not at all, to 5 = completely or almost entirely) to which an item was measuring mutual acceptance or mutual benevolence (the two subdomains of the construct of relational harmony), intragroup relationship conflict, and group cohesiveness. The scores for each theoretical construct were compared with one-way ANOVAs and planned t-tests (Hinkin & Tracey, 1999). Using this approach, only items that had a significantly higher mean on either of the two relational harmony factors would be retained. Item 14 was excluded from the test because this item was not written to indicate either mutual acceptance or mutual benevolence. An illustration of the data matrix for such a test can be seen in Figure 3.

Table 2 provides the ANOVA results, including each item’s mean score on the two subdomains of relational harmony, the overall F, and the planned pairwise comparisons of the means. The overall F results show that there were significant differences among most items’ means on the four dimensions (mutual acceptance, mutual benevolence, relationship conflict, and group cohesiveness). Given significant overall effects, the more specific patterns of the mean differences are shown in the last three columns. As a result of this series of analyses on items 1-13, items 5 (“We are considerate of the other party’s difficulties”), 6 (“We give in on arguments rather than risk making the other party mad”), and 8 (“We are considerate of each other’s situation”) were deleted because they failed the overall F-tests or the subsequent t-tests, and were thus not considered sound representations of relational harmony (compared with
relationship conflict or group cohesiveness). Item 14 (“I would describe the relationship between us as harmonious”) was excluded from the analysis and was retained nonetheless because this item had been widely used in assessing relationship harmony in the literature (e.g., Kwan et al., 1997; Lun & Bond, 2006; Chuang, 2005; Chen et al., 2006; Banker & Gaertner, 1998).

**Study 2: Item Reduction**

According to Hinkin (1998), in this stage of scale development, items that have survived the content adequacy assessment will be used to measure the construct under investigation. These items, along with other established measures, should be presented to a sample that can represent the actual population of interest (e.g., full-time employees). These other established measures can be those that are related to or independent from the construct under examination. Next, exploratory factor analysis should be used to provide preliminary evidence regarding the convergent and discriminant validity and, hence, the construct validity of the new scale. Finally, the reliability (i.e., internal consistency) of the new measure should be assessed after unidimensionality has been established (Hinkin, 1998).

**Sample and procedure.** Due to resource constraints, data were collected in China. Therefore, all the instruments that were first developed in English needed to be translated into Chinese. The quality of translation is critical to measurement equivalence (Mullen, 1995). A translation and back-translation procedure was followed to assure the English-Chinese isomorphism of the items (Brislin, 1986). Three Chinese management doctoral
students\(^3\) who were studying or had studied in North America helped the English-Chinese translation, Chinese-English back-translation, and discussed any discrepancies (Brislin, 1986; Mullen, 1995). Discrepancies were discussed (i.e., using a committee approach; Brislin, 1970) until satisfactory item wording was achieved. After this process, all the instruments were presented to two Chinese employees for a pretest (Brislin, 1970). Neither of them indicated difficulties in comprehending the questions. The survey was thus considered to be in satisfactory shape to be administered in a field setting.

The sample was obtained using a snowball sampling technique (Coleman, 1958; Goodman, 1961) in which I randomly contacted an initial 30 full-time employees using my social network in the North, East, and South China. These people were invited to participate in a 5-minute online survey (see Appendix C for an English version) created in the Qualtrics platform, a third-party online survey administration company. They were also asked to pass the survey link to five to ten full-time employees with whom they were very familiar but did not share the same supervisor (to avoid the non-independence issue; Bliese, 2000). In the survey instructions, participants were told that the purpose of this survey was to gain knowledge about team management in contemporary organizations, that participation was voluntary and anonymous, and that only if they worked in a team of more than three non-leader members could they continue to answer the survey questions. In addition, participants were assured that only the aggregated information would be used. In fact, demographic information including only gender, age, and education level was obtained and it would be impossible to identify the person who filled out any particular survey. Within five days, 233 employees were reached, 146 started the survey, and 137 completed the survey with complete information. The response rate was

\(^3\) I thank Wenhao Luo, Yuanmei Qu, and Wei Wang, for their assistance in the survey translation process.
58.8%, and it is likely that some of those who chose to not participate did not meet the team membership requirement (i.e., work in a team setting with at least 3 non-leader team members). Among the 137 participants, 60 were female, all of them had at least a college degree, and their average age was 28 (SD = 3.58).

**Measures.** This survey contained the remaining 11 relational harmony items, a 9-item measure of intragroup conflict (task conflict, relationship conflict, and process conflict; Jehn & Mannix, 2001), a 3-item measure of group cohesiveness (Podsakoff & MacKenzie, 1994), and a 6-item measure of coworker exchange relationships (Sherony & Green, 2002). These additional variables were chosen because they are meant to assess conflict, group unity, and relationship quality, and it is very important that the newly developed relational harmony scale shows discriminant validity from them. Subjects were asked to use their work team as the referent for the questions concerning intragroup conflict and group cohesiveness. They were also asked to think of a coworker with whom they had their most frequent interactions and use this relationship as the referent for the questions regarding relational harmony and coworker exchange. A 5-point Likert-type response scale, ranging from “1 = strongly disagree” to “5 = strongly agree”, was used.

**Exploratory factor analysis.** An exploratory factor analysis (EFA) using principal axis factoring extraction and Varimax rotation was performed. As seen in Table 3, all the items loaded property on their expected factors (showing convergent validity) and did not load on unexpected factors (showing discriminant validity), except that one of the group cohesiveness items had a loading on both the cohesiveness factor and the relational harmony factor. Since the main purpose of this step was to delete items from the newly developed scale that might not be perceptually distinguishable from other similar
constructs, none were deleted and the psychometric quality (both convergent and
discriminant validity) of this scale was considered to be supported. The new 11-item
relational harmony scale had a coefficient alpha internal consistency reliability of .94,
which is excellent for a scale with diverse item content (Nunnally & Bernstein, 1994).

**Item reduction.** Encouraged by the scale’s initially sound psychometric properties
(satisfactory content, convergent, and discriminant validity, as well as good internal
consistency), my next step was to produce a parsimonious version of the relational
harmony scale that not only would be easy to use (i.e., be short) but also had reasonable
domain sampling and internal consistency reliability (Cronbach & Meehl, 1955; Hinkin,
1995, 1998). Cook et al. (1981) suggested that adequate scale reliabilities can be obtained
with as few as three items. Therefore, I selected two items, each having the highest
loading on its content domain (Benevolence item 1 and Acceptance item 2), and added
the general item (which loaded the second highest and should be included regardless) to
make a 3-item shortened scale. This scale had a reliability of .87, and its correlation with
the 11-item scale was also extremely high ($r = .95$, $p < .001$).

**Study 3: Confirmatory Factor Analysis**

**Sample, procedure, and measures.** To further increase confidence in the use of
the newly developed short scale at the team level, I collected data from 122 employees in
20 work teams (e.g., pharmaceutical production, marketing, and R&D) in a
pharmaceutical company in Eastern China. These employees all work in teams and are in
the best position to evaluate members’ interactions as a team. Among these employees,
51 were female, their average age was 36.4 (SD = 11.7), and all but 5 had at least a
college degree. These employees’ average work tenure, organizational tenure, and group
tenure were 15 years, 11.7 years, and 8 years, respectively. Questions were built into a company-wide survey conducted by the HR department. All the questions were in Chinese, using the translated instruments described above. However, due to constraints on survey length, I was only able to collect information on team relational harmony and intra-team conflict (See Appendix D). To demonstrate that team relational harmony is not simply a lack of intra-team conflict, employees rated the team on both the new relational harmony scale ($\alpha = .91$) and Jehn and Mannix’s (2001) intra-team conflict scale ($\alpha = .94$). It should be noted that the wording of the newly developed relational harmony scale did not have a specific referent, and in my EFA, the items were worded at the dyadic (interpersonal) level. In this sample, a referent-shift consensus approach (Chan, 1998) was used to measure team-level relational harmony. According to Chan (1998), in a referent-shift consensus composition model, the researcher should begin with a conceptual definition and operationalization of a construct at a lower level. In this research, the lower-level construct is interpersonal relational harmony (between two people). Then, while maintaining the basic content of the construct, the research shifts the referent of the content to reflect a new construct at a higher level (Chan, 1998). Simply speaking, the referent for the team relational harmony measure is changed to be team members, and the three items of the team relational harmony scale now read as, “Overall, members in our team accept each other’s unique or idiosyncratic characteristics”, “Overall, our team members stand up for each other”, and “I would describe the relationships among our team members as harmonious”.

**Results.** I performed a series of confirmatory factor analyses (CFAs) using Mplus 6.12 (Muthén & Muthén, 2011) to examine the discriminant validity of my measure of
team relational harmony. A two-factor model (shown in Figure 4) was employed, with the 3 items of team relational harmony loaded on one factor and the 9 items of intragroup conflict each loaded on one of three sub-scale factors (i.e., relationship conflict, task conflict, and process conflict) that comprised a second-order factor (with correlated factors and uncorrelated measurement errors). This model provided a satisfactory fit to the data ($\chi^2(50) = 101.29$, CFI = .96, TLI = .95, RMSEA = .09, SRMR = .06), and it was then compared with two alternative models. Alternative model A had the three team relational harmony items and three relationship conflict items loaded on one factor, and the rest of the six conflict items loaded on sub-scale factors that comprised a second-order factor. This model ($\chi^2(51) = 337.02$, CFI = .77, TLI = .71, RMSEA = .21, SRMR = .22) provided an unacceptable fit to the data and fit significantly worse ($\Delta \chi^2(1) = 235.73$, $p < .001$). Alternative model B had the three team relational harmony items loaded on one factor, and the nine conflict items loaded on another factor. This two-factor model did not achieve a satisfactory fit either ($\chi^2(53) = 227.54$, CFI = .86, TLI = .83, RMSEA = .16, SRMR = .07) and also fit significantly worse ($\Delta \chi^2(2) = 126.25$, $p < .001$).

The above evidence thus further strengthens confidence in the newly developed relational harmony scale, especially its psychometric properties when administered at the team level. Figure 4 presents the results, including factor loadings and the correlation between the two latent variables.

**Summary**

In this chapter, 3 studies, each employing a different sample and analysis, were used to develop a 3-item parsimonious scale of relational harmony. Scale development followed Hinkin’s (1998) deductive approach, including item generation, content
adequacy assessment, an EFA, and a CFA with a new sample. In addition, the use of translation, back-translation, discussion of discrepancies, and a pretest (Brislin, 1970) has addressed concerns about translation equivalence and measurement equivalence. Following Hinkin’s (1995, 1998) rigorous scale development procedures, and supported by satisfactory empirical evidence, the current study supports a conceptualization of relational harmony as a unique construct and suggests that this new measure should have value for research in team settings. Further psychometric evaluations of the new measure, as well as tests of the substantive hypotheses, are presented in the two chapters that follow.
CHAPTER 5

METHODS FOR STUDY 4: HYPOTHESES TESTING

The purpose of this chapter is to describe the research design and analytical strategies for testing the seven hypotheses proposed in Chapter 3. First, I define the population of the current study. Second, I describe the sampling and data collection procedure, as well as the sample characteristics. Third, a list of instruments used in the study is presented. Fourth, I discuss the level of analysis issue and justify the data aggregation process. Finally, the analytical strategies and planned statistical tests are introduced.

Study Population

The study population comprises work teams in for-profit organizations. Guzzo and Dickson’s (1996) definition of work teams is used to define the study population. Specifically, to be qualified as teams, work units (e.g., groups, departments, stores, branches, etc.) must be “made up of individuals who see themselves and who are seen by others as a social entity, who are interdependent because of the tasks they perform as members of a group, who are embedded in one or more larger social systems (e.g., community, organization), and who perform tasks that affect others (such as customers or coworkers) (Guzzo & Dickson, 1996: 308-309). Therefore, my study population may best include people coming from companies in which members are organized into formal work units where tasks are interdependent and performance is based on product or service provided. In fact, Guzzo and Dickson’s (1996) definition has been widely used to
select teams. For example, Barrick and colleagues (1998) used these criteria to select teams and ended up with a sample composed of 51 work teams, including assembling, fabrication, and maintenance teams, in four organizations. In addition, because my research questions involve understanding team configuration from a subgroups perspective, as well as the role of the formal team leader, several other criteria should be satisfied in defining the study population. First, the team should have only one formal leader. Second, the team should have at least four non-leader members, the minimum number for a team to be split into two balanced subgroups. Third, the team should have no more than fifteen members (i.e., fourteen non-leader members). This number may be arbitrary because there has been no consensus on the range of team size (James, 1951; Thomas & Fink, 1963). In some studies, researchers have restricted their team size to be no more than 10 (e.g., Watson, 1928), whereas in others, the maximum was 20 (Miller, 1951). Therefore, I chose the midpoint, 15, as the upper limit of a team’s size.

**Sample and Procedure**

Given the complex model this study is analyzing, I first did a power analysis to determine the minimum required sample size. Because all my hypotheses are at the team level, the unit of analysis is the team. As I will explain later in this chapter, the most complex model in the hierarchical multiple regression analysis will include 14 predictors, with two of them entered simultaneously in the final step. Therefore, given a desired statistical power level of .80, a probability level of .05, the number of predictors in set A (i.e., the number of predictors before the last step) being 12, and the number of predictors in set B (i.e., the number of predictors in the last step) being 2, to observe a large effect, the minimum required sample size should be 43 (Soper, 2015).
To generate the sample, I first sent a request to a national car rental company in the Southeast U.S., with the hope to survey their teams working in a wide range of locations and branches. However, after several rounds of communication with the HR department, the company showed reluctance in participating in a three-wave survey. A personal connection was then used and several Chinese companies showed strong interest.

Data were collected from three medium-sized companies (with full-time employees ranging from 300 to 1000) in East China. Their businesses fall into three industries, including financial services (organization 1), hospitality (organization 2), and manufacturing (organization 3). With support from the executive office of each company, I collected data at three different points in time from both the team members and the team leaders. The first survey was administered to team members to request their demographic information (such as gender, age, education background, organizational tenure, and managerial position), their perceived leader-member social exchange relationships, and their perceptions of their leader’s interaction facilitation behaviors. Three weeks later, those who participated in the first survey were asked to complete a short survey containing questions to evaluate team relational harmony. In another two weeks, the team leaders were asked to provide their own demographic information, their perceived level of task discretion, and an evaluation of team performance.

Participating teams were selected by the company’s executive office and they had to meet all the criteria that define a team (Guzzo & Dickson, 1996): (1) be seen as a social entity, (2) have interdependent tasks, (3) be embedded in a larger social system (e.g., organization), and (4) perform tasks that affect others (e.g., customers). Since all three companies produce products or services, criteria (3) and (4) were easily met. The
company’s executive office helped determine whether the collective of people was seen as a social unit (rather than a group of isolated individuals) and whether the members of the units had interdependent tasks. In addition, as I explained previously, only teams that were supervised by a formal leader with a range of 4-14 non-leader members were included.

A total of 384 team members and their 49 team leaders from 49 teams were selected. Since this initial sample size was close to the minimum required (based on the statistical power analysis conducted above), a high response rate and high quality data were required. I visited every company and every location (for teams that were distributed in different areas) during their paid work time to conduct the surveys. Participation was voluntary, and food, beverages, and small gifts were provided to the respondents to express gratitude for their participation. With the assistance of staff from the executive office or the HR department, I made every effort to aim for a high response rate and a low mortality rate. Specifically, anyone who was absent on the day a questionnaire was distributed (onsite) was contacted within one week to complete the survey. The same incentives (food, beverages, and small gifts, as well as release time from their paid work hours) were used.

Surveys were conducted in Chinese (See Appendix E for an English version) and, as described in the last chapter, the same translation and back-translation procedure was followed to assure the English-Chinese isomorphism of the items (Brislin, 1986). The team members received a sealed envelope containing a member questionnaire, a cover letter with instructions and a consent form, and a list of team members. The list showed each team member’s last name and initials (rather than their full names), as well as a
corresponding pre-assigned 5-digit code. Members were asked to return only the questionnaire (and not the name list or the cover letter) and to use only their unique code for identification purposes. They were told that anonymity would be fully assured, that neither their employers nor their coworkers would have access to the data, and that only the aggregate team data would be used for research purposes. To further reduce participants’ uncertainty and anxiety about their participation, I collected their complete questionnaires in sealed envelopes on site. Additionally, since the subjects were presented with a name list containing their last name and initials only, and because I did not have access to the code assignments (and their company did not have access to the completed surveys), anonymity was fully ensured while still allowing the matching of individual and team data.

This procedure resulted in 344 team members completing the first survey. Despite the high response rate in general (89.6%), there were two teams where the response rates were not acceptable (only 3 of 8 and 3 of 14 members, respectively, filled out the survey). Therefore, these two teams were not included in the next wave of data collection which occurred three weeks later. Among the 338 team members in the 47 remaining teams, no one dropped out at the second time. In another two weeks, all 47 team leaders were asked to fill out the leader questionnaire. A similar procedure to ensure confidentiality and anonymity was applied. A total of 46 leaders returned the survey. The only leader who did not return the survey was on an extended leave. Thus, I eliminated this team from the final sample.

After discarding incomplete and clearly careless responses, the final sample included in the current study consisted of 320 team members and their 46 leaders in 46
teams. 12 teams were from Organization 1, 17 from Organization 2, and 17 from Organization 3. Actual team sizes ranged from 4 to 14, with a median of 7 and a mean of 7.67. Such team sizes are comparable to those in recent research on subgroups and faultlines. For example, the following published articles presented their average team sizes as: 4.64 (Gibson & Vermeulen, 2003), 7.46 (Bezrukova et al., 2009), 6.16 (Jiang, Jackson, Shaw, & Chung, 2012), 8.44 (Carton & Cummings, 2013), 6.57 (Hutzschenreuter & Horstkotte, 2013), 5.89 (Cooper et al., 2014), and 5.49 (Ren et al., in press). Team response rates ranged from 60% to 100%, with a median of 100% and a mean of 89.9%.

The average age of the team members was 33.8 years, and the average tenure in their current organizations was 6 years. Females comprised 53.4%, 64.1% had a college degree or higher, and 20.9% held managerial positions. The average age of the team leaders was 35.7 years, and these leaders had an average organizational tenure of 8.3 years. Females comprised 43.5% of these respondents and 80.4% had a college degree or higher.

Measures

A five-point Likert-type response scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used for the measures of leader-member exchange, leader interaction facilitation behavior, and team relational harmony. Another five-point Likert-type response scale (1 = very poor, 2 = poor, 3 = fair, 4 = good, 5 = very good) was used for the measure of team performance. Demographic information, including gender (1 = female, 2 = male), age (in years), education background (1 = middle school or below, 2 = high school, 3 = three-year college or an equivalent level of education, 4 = Bachelor’s
degree, 5 = Master’s degree or above), organizational tenure (in months), and managerial position (whether a team member engages in managerial activities or has direct reports, coded as 0 = no and 1 = yes) were obtained.

**Leader-member exchange.** Each team member’s perceived leader-member social exchange relationship was measured with eight items drawn from Bernerth et al. (2007) ($\alpha = .90$). Sample items are “My relationship with my team leader is composed of comparable exchanges of giving and taking” and “I have a balance of inputs and outputs with my manager”.

**Leader interaction facilitation behavior.** Team members rated their team leader’s interaction facilitation behaviors with Taylor’s (1971) three-item scale ($\alpha = .89$). These three items are “Encourages us who work for him/her to work as a team”, “Encourages us who work for him/her to exchange opinions and ideas”, and “Often holds group meetings where s/he and our team members can really discuss things together”.

**Team relational harmony.** The three-item scale developed for this study was used to measure team members’ perceived team-level relational harmony ($\alpha = .84$). To restate, the items are “Overall, members in our team accept each other’s unique or idiosyncratic characteristics”, “Overall, our team members stand up for each other”, and “I would describe the relationships among our team members as harmonious”.

**Team performance.** The team leaders assessed the performance of their teams with three items drawn from De Jong and Elfring (2010) ($\alpha=.77$). These three items are “The amount of work the team produces”, “The quality of work the team produces”, and “My overall evaluation of the team’s effectiveness”.
**Control variables.** I controlled for potentially confounding variables likely to be related to the predictors, the mediator, and the outcome.

1. Team size. It has been demonstrated that the size of the team is related to team processes and performance (James, 1951; Hackman & Vidmar, 1970). Team size is also related to the configurational properties of subgroups (i.e., the number of subgroups and subgroup balance) (Carton & Cummings, 2013). For example, larger teams are more likely to break into subgroups (Shaw, 2004). Thus, the effect of team size was statistically controlled.

2. Team response rate. It would have been better if all the teams included in the analysis had a 100% response rate. However, only including those teams would reduce the sample size and thus statistical power. Additionally, it has been recommended that a full sample of teams with variable response rates should be used in team research (Hirschfeld, Cole, Bernerth, & Rizzuto, 2013). Hence, in conformity with Carton and Cummings (2013), team response rate was controlled to rule out the possibility that variation in response rate influences the way the configurational properties of the subgroups were calculated.

3. Organizations. I controlled for organizations with two dummy variables because the three companies in my sample had their businesses operating in three different industries, being financial services, hospitality, and manufacturing.

4. Team autonomy. Team autonomy, defined as the extent to which a team has considerable discretion and freedom in deciding how to carry out tasks
(Langfred, 2005), has been considered a critical element that influences team performance (Stewart & Barrick, 2000). It has been found that in teams where tasks are interdependent, a high level of team autonomy is positively related to team performance (Langfred, 2005). Because my sample teams came from different industries and organizations, their tasks were not comparable. Therefore, the level of discretion and autonomy a team has to perform tasks was statistically controlled. Each team leader was asked to provide information concerning team autonomy, choosing one from the following three options: “1 = There isn’t much autonomy in the way the team tasks are performed”, “2 = The way team tasks are performed is fairly autonomous (e.g., the team has some autonomy to make discretionary arrangements at work)”, and “3 = The way team tasks are performed is very autonomous (e.g., the team has a great deal of autonomy to make many discretionary arrangements at work)”. It would have been a better design if the level of team autonomy was rated using a multiple-item scale to assess reliability (e.g., Breaugh, 1985). However, the reason for including this variable was only to distinguish between different types of team tasks for the purpose of statistical control, so that a simple question was sufficient and did not add to participants’ survey fatigue (Hinkin, 1995).

5. I also included the leader’s age and team tenure as control variables. The leader’s age reflects maturity, and is related to career achievement (Kearney, 2008). The leader’s team tenure reflects his or her experience in leading the team, as well as familiarity with the team members (Ahearn, Ferris,
Hochwarter, Douglas, & Ammeter, 2004). Both of these factors could be confounded with leadership behaviors (Kearney, 2008) and might introduce alternative explanations for variations in team performance (Kearney, 2008; Ahearn et al., 2004).

**Determining Resource-Based Subgroups**

Meyer and Glenz (2013) developed a free software package, “asw.cluster”\(^4\), that can be used in R (a programming language and free open-source software environment for statistical computing) to determine the strength of group faultlines, the number of subgroups, and the corresponding member-to-subgroup association. ASW, which stands for Average Silhouette Width, was originally proposed for use in cluster analysis to select an appropriate number of clusters (Rousseeuw, 1987).

Meyer and Glenz (2013) introduced this cluster-based approach to detecting subgroup splits associated with the strongest group faultlines. Specifically, a cluster analysis is used to group team members into clusters (i.e., subgroups) according to their similarity, such that there will be maximum homogeneity within clusters and maximum heterogeneity between clusters (Meyer & Glenz, 2013). ASW is the average of all team members’ individual Silhouette Widths, which is calculated to quantify how well a team member \(i\) fits into one cluster (cluster A) in comparison to another (cluster B).

Mathematically, an individual \(i\)’s Silhouette Width is calculated by

\[
S(i) = \frac{b_i - a_i}{\max(a_i, b_i)},
\]

\(^4\) This package can be found at http://www.group-faultlines.org.
where $a_i$ denotes the average dissimilarity (i.e., calculated as the Euclidean distance between two members) of team member $i$ to all members of cluster A, and $b_i$ denotes the average dissimilarity of team member $i$ to all members of cluster B. Moreover, when there are more than two clusters, $b_i$ is denoted as the minimum average dissimilarity to any cluster other than A. The closer the value of $s(i)$ is to 1, the stronger one’s association with its cluster; the closer the value of $s(i)$ to 0, the more ambiguous one’s association with its cluster. Therefore, the optimal configuration of clusters (i.e., subgroups) is achieved when moving an individual from one cluster to another does not further increase the Silhouette Width. Thus, ASW values can be used to measure the strength of group faultlines, with higher ASWs indicating stronger faultlines. For more information about this method, interested readers can refer to Meyer and Glenz (2013) and consult the website, http://www.group-faultlines.org.

Once the optimal configuration of subgroups is determined in a team, the number of subgroups, the member-to-subgroup assignment, and the size of each subgroup in each team are known. The software created by Meyer and Glenz (2013) provides all these values as part of the output, which can be saved as an SPSS data file.

In addition to the number of subgroups, the other subgroup configurational property is the variation of subgroups in size (i.e., the balance of subgroups or subgroup balance) (Carton & Cummings, 2013). This is calculated as the standard deviation of subgroup size in each team multiplied by (-1) (Carton & Cummings, 2013), so that a negative value suggests imbalance and a value of zero indicates the most balanced scenario.
In this research, the alignment of three individual member attributes was used to determine the most plausible resource-based subgroup configuration. Discussion of this operationalization of resource-based subgroups can be found in Chapter 3, where I justified why these attributes are related to one’s status and power, and thus reflect resource differentials. These three attributes are LMX, organizational tenure (in months), and managerial position (i.e., whether a member engages in certain managerial activities or has direct reports, coded as 0 = no and 1 = yes). Using the package described above, three independent variables—subgroup faultline strength, number of subgroups, and balance of subgroups—were generated for each team.

**Data Aggregation**

To test the hypotheses, leader interaction facilitation behavior and team relational harmony, initially measured as each team member’s perception, had to be aggregated to the team level. To assess the appropriateness of aggregation, a one-way analysis of variance (ANOVA) was performed by contrasting within-team variance to between-team variance. Small within-team variance relative to between-team variance indicates greater-than-chance similarity among team members, justifying aggregation of the data to the team level (Bliese, 2000). The results showed that the means of leader interaction facilitation behavior ($F(1,45) = 2.72, p < .01$) and team relational harmony ($F(1,45) = 2.75, p < .01$) differed significantly across teams, suggesting significant between-team effects.

Additionally, intraclass correlation coefficients, $ICC(1)$ and $ICC(2)$ (James, 1982), for leader interaction facilitation behavior and relational harmony were calculated. $ICC(1)$ compares the between-team variance to the within-team variance, and describes the
amount of variance that can be attributed to team membership (James, 1982). ICC(1) can be also interpreted as an indicator of agreement within the team because a high intraclass correlation reliability coefficient is associated with small within-team variance (Bartko, 1976; James, 1982). Thus, higher ICC(1) justifies aggregation to a greater extent. James (1982) reported a median ICC(1) value of .12 in organization research, and this value has been used as a recommended cutoff value for justifying aggregation. ICC(2) provides an estimate of the reliability of the team means (Bartko, 1976; James, 1982), with a recommended cutoff value of .60 (Glick, 1985; Schneider, White, & Paul, 1998). Higher ICC(2) indicates higher reliability of the means and a more reliable differentiation among teams (James, 1982). In this sample, the results showed that ICCs(1) were .20 for leader interaction facilitation behavior and .21 for relational harmony, suggesting that 20% of the variability in an individual’s ratings of leader interaction facilitation behavior and 21% of the variability in an individual’s ratings of relational harmony was explained by team membership. Both of them are well above the cutoff value of .12 (James, 1982). ICCs(2) were .63 for leader interaction facilitation behavior and .65 for relational harmony, both of which are above the cutoff value of .60 (Glick, 1985; Schneider et al., 1998).

Finally, within-team agreement was calculated for both the leader interaction facilitation behavior measures and the team relational harmony measures to provide further evidence to justify data aggregation. The term within-team agreement refers to the degree to which ratings from individual team members are interchangeable (Bliese, 2000). It is recommended that within-team interrater reliability (agreement) for judges’ mean scores based on J items (r_{WG(j)}; James, Demaree, & Wolf, 1984) be used in organizational research. However, the literature on the recommended cutoff criterion for r_{WG(j)} is not
without controversy (Lance, Butts, & Michels, 2006). Although a cutoff criterion of .70 has been commonly cited and attributed to James et al. (1984), Lance and colleagues (2006: 207) pointed out that “What James (1982) and James et al. (1984) actually said regarding the .70 cutoff criterion for \( r_{WG(j)} \) was … nothing.” Rather, the two original sources were James (personal communication, February 4, 1987), cited by George (1990: 100), and James’s (1988) chapter where he relied on the .70 cutoff as indicating acceptable within-group agreement. LeBreton and colleagues (2008) maintained that artificially dichotomizing decisions concerning agreement using the .70 cut point is problematic. Instead, they proposed revised standards for interpreting interrater agreement estimates, being lack of agreement (.00-.30), weak agreement (.31-.50), moderate agreement (.51-.70), strong agreement (.71-.90), and very strong agreement (.91-1.00).

The common practice in reporting \( r_{WG(j)} \) is to report its mean and/or median across groups (Cohen, Doveh, & Nahum-Shani, 2009). In this sample, the mean \( r_{WG(j)} \)s were .78 and .81 for leader interaction facilitation behavior and team relational harmony, respectively, and the median \( r_{WG(j)} \)s were .84 and .86 for leader interaction facilitation behavior and team relational harmony, respectively. However, there were 11 out of 46 teams where the \( r_{WG(j)} \) for leader interaction facilitation behavior was lower than .70 (but all over .30), suggesting that, in these teams, team members might not have achieved strong agreement (based on the standards proposed by LeBreton et al., 2008) regarding their leader’s interaction facilitation behavior. LeBreton et al. (2008) argued that low agreement may be systematic and important to examine, and that dropping these teams is never recommended. In this research, it is possible that such a dispersion of perceptions
of leader interaction facilitation behavior, which can be understood as the strength of leader interaction facilitation behavior (Chan, 1998), serves as one source of low relational harmony. Thus, in the subsequent analyses whenever possible, I included a new control variable, leader interaction facilitation dispersion, calculated as the standard deviation of leader interaction facilitation around each team’s mean.

To summarize, the above information regarding the ANOVA results, $ICC(1)$, $ICC(2)$, and $RWG(j)$ justifies the aggregation of the data to the team level overall.

**Analytic Strategy**

As described above, after having created a set of new variables pertinent to the subgroup configurations and having relevant data aggregated to the team level, all study variables, including the predictors (faultline strength, number of subgroups, and balance of subgroups), the moderator (leader interaction facilitation behavior), the criterion variables (team relational harmony and team performance), and the control variables (team size, team response rate, organization dummy, team autonomy, team leader’s age, team leader’s tenure in the team, and within-team dispersion of leader interaction facilitation) were now located at the team level.

Hypotheses 1-5 were tested in a series of multiple regression models in SPSS 22. In order to test Hypothesis 6, involving a moderated non-linear indirect effect, I followed Hayes and Preacher’s (2010) procedure in estimating the instantaneous indirect effect of $X$ (the number of subgroups) on $Y$ (team performance) through $M$ (team relational harmony) under different conditions of $Z$ (high versus low levels of leader interaction facilitation behavior). According to Stolzenberg (1980) and summarized by Hayes and Preacher (2010), when $X$ is non-linearly related to $M$, or $M$ is non-linearly related to $Y$, or
both, the instantaneous indirect effect of \( X \) on \( Y \) through \( M \) is denoted as \( \theta \), indicating the rate at which a change in \( X \) changes \( Y \) through changes in \( M \). As seen in the formula below, \( \theta \) is the product of the first partial derivative of the function of \( M \) with respect to \( X \) and the first partial derivative of the function of \( Y \) with respect to \( M \).

\[
\theta = \left( \frac{\partial M}{\partial X} \right) \left( \frac{\partial Y}{\partial M} \right)
\]

In calculus, the first derivative of a function with respect to a variable in that function is called the *instantaneous rate of change* of the function (with respect to that variable). Hayes and Preacher (2010) borrowed this language and thus called \( \theta \) the instantaneous indirect effect of \( X \) on \( Y \) through \( M \). When the relationship between \( X \) and \( M \) is linear (\( \frac{\partial M}{\partial X} \) is constant), and the relationship between \( M \) and \( Y \) is linear (\( \frac{\partial Y}{\partial M} \) is constant), based on the formula above, \( \theta \) should be constant. However, in testing Hypothesis 6, the relationship between \( X \) and \( M \) was hypothesized to be non-linear and to take a quadratic shape (\( \hat{Y} = f(X) + (bM)(a_1X + a_2X^2 + a_3Z + a_4XZ + a_5X^2Z) \)).

Thus, one must estimate the instantaneous indirect effect, \( \theta_x \), on specific values of \( X \) (\( X = x \)) (Hayes & Preacher, 2010). \( \theta_x \) changes as \( X \) changes, and it quantifies how much \( Y \) changes indirectly through \( M \) at the point \( X = x \).

Estimation of the instantaneous indirect effects \( \theta_x \) of the number of subgroups on team performance through team relational harmony at high (one standard deviation above the mean) versus low (one standard deviation below the mean) (Aiken & West, 1991) levels of leader interaction facilitation behavior was conducted in Mplus 6.12 (Muthén & Muthén, 2011). Hayes and Preacher’s (2010: 655) Mplus code was employed. All the predictors were mean-centered (Hayes & Preacher, 2010). This program produced a

\footnote{\( f(X) \) represents the direct effect of \( X \) on \( Y \), and \( bM \) represents the indirect moderated-mediation effect.}
series of estimations of $\theta$ (unstandardized coefficients along with statistical significance tests) given different numbers of subgroups under two levels of leader interaction facilitation behavior.

In testing Hypothesis 7, where a moderated mediation model is involved, Edwards and Lambert’s (2007) analytical procedure was followed. They recommend running a regression analysis on the mediator and another one on the dependent variable. Using the estimated regression coefficients obtained from the regression models, I employed Edwards and Lambert’s (2007) SPSS Syntax to compute the direct, indirect, and total effects of $X$ (balance of subgroups) on $Y$ (team performance) through $M$ (team relational harmony) under high (one standard deviation above the mean) versus low (one standard deviation below the mean) levels of the moderator $Z$ (leader interaction facilitation behavior) with 1,000 bootstrap estimates. Specifically, the two regression models below were run.

$$M = a_{05} + a_{X5}X + a_{Z5}Z + a_{XZ5}XZ + e_{M5}$$

$$Y = b_{06} + b_{X6}X + b_{Z6}Z + b_{XZ6}XZ + b_{M6}M + e_{Y6}$$

Estimates of direct effects were based on $(b_{X6} + b_{Z6}Z)$ and estimates of indirect effects were based on $([a_{X5} + a_{Z5}Z] b_{M6})$ (Edwards & Lambert, 2007). The indirect effect involves products of regression coefficients, which are recommended to be estimated using bootstrapping (Edwards & Lambert, 2007; MacKinnon, Lockwood, & Williams, 2004). Bootstrapping is a nonparametric resampling method that does not assume normality of an indirect effect’s distribution (which is assumed by traditional significance tests). Compared with other methods of testing mediating effects, bootstrapping generally obtains more accurate confidence limits for the indirect effects, with bias-corrected
bootstrapping (BC bootstrapping) being the preferred method in terms of Type I error rates and statistical power (MacKinnon et al., 2004). Bootstrapping generates a sampling distribution of the product of regression coefficients by repeatedly estimating the coefficients with 1,000 bootstrap samples. These products are then rank-ordered to locate percentile values (e.g., the 2.5 and 97.5 percentiles for a 95% confidence interval). A 95% confidence interval that does not include zero suggests an estimate as being “statistically significant”. To test simple effects (i.e., the effect of $X$ on $Y$ through $M$ under a level of $Z$), high (one standard deviation above the mean) and low (one standard deviation below the mean) values of $Z$ were employed (Aiken & West, 1991), followed by an estimation of the confidence intervals derived from the bootstrap method described above.
CHAPTER 6

RESULTS FOR STUDY 4: HYPOTHESES TESTING

In this chapter, results pertaining to the test of the seven hypotheses are reported.

Confirmatory Factor Analyses

Among all the study variables shown in Table 4, only leader interaction facilitation behavior, team relational harmony, and team performance were measured with multi-item scales. These three variables were measured at three different time points; the first two were rated by the team members at the individual level, and the latter one was rated by the team leader at the team level. Therefore, a CFA test of discriminant validity involves only two variables—leader interaction facilitation behavior and team relational harmony, with each having three items. The resultant two-factor solution (shown in Figure 5), with two correlated factors and uncorrelated error, provided an excellent fit to the data ($\chi^2(8) = 14.94, p > .05, \text{CFI} = .99, \text{TLI} = .99, \text{RMSEA} = .05, \text{SRMR} = .02$). Then, this two-factor model was compared with an alternative model where all six items were loaded on one factor. The result for this alternative model ($\chi^2(9) = 206.43, p < .001, \text{CFI} = .82, \text{TLI} = .69, \text{RMSEA} = .26, \text{SRMR} = .10$) indicated that the two-factor model fit significantly better ($\Delta\chi^2(1) = 191.49, p < .001$), demonstrating good discriminant validity among these two variables rated by the same person at different times at the individual level. Figure 5 presents the results, including factor loadings and the correlation between the two latent variables.
Hypotheses Tests

Means, standard deviations, and bivariate zero-order correlations of the study variables are reported in Table 4. Hypothesis 1 proposes that the salience of the resource-based subgroup faultlines (i.e., faultline strength) is positively related to team relational harmony. Although the zero-order correlation between the two was significant—shown in Table 4 ($r = .39, p < .01$), as also shown in Table 5 (M2), it became nonsignificant ($\beta = .15, \text{n.s.}$) after controlling for the seven control variables discussed above. Therefore, Hypothesis 1 was not considered supported. However, evidenced by the significant correlation between faultline strength and team relational harmony, and suggested by previous research (Carton & Cummings, 2013), faultline strength should be controlled in tests of the effects of configurational properties of subgroups (e.g., number of subgroups and balance of subgroups), and thus this variable was retained in the models for all subsequent analyses.

Hypothesis 2 predicts that the relationship between the number of resource-based subgroups and team relational harmony is an inverted U-shape. As shown in Table 5 (M4), the squared term of the number of subgroups was significant ($\beta = -.56, p < .05$), and the curvilinear effect is shown in Figure 6 as an inverted U-shape. Thus, Hypothesis 2 received support. Additionally, I tested Hypothesis 3, for the effect of subgroup balance, in Model 5. However, Hypothesis 3 was not supported ($\beta = .06, \text{n.s.}$).

Next, I tested whether leader interaction facilitation behavior played a moderator’s role (Hypotheses 4 and 5). As shown in Table 5, the interaction term of the squared number of subgroups and leader interaction facilitation behavior (Model 7) was significant ($\beta = .38, p < .05$). Figure 7 depicts the pattern of the moderated curvilinear
When leader interaction facilitation was low, the inverted U-shaped curvilinear relationship between the number of subgroups and team relational harmony was more pronounced, suggesting that there was an optimal point beyond which more subgroups was associated with lower team relational harmony. In contrast, when leader interaction facilitation was high, the nature of the relationship between the number of subgroups and team relational harmony changed to an upward J-curve, suggesting that more subgroups was associated with higher team relational harmony. Thus, Hypothesis 4 was supported.

With regard to the moderating effect of leader interaction facilitation behavior on the relationship between balance of resource-based subgroups and team relational harmony, the result (M9) showed an effect but it was significant at only the .10 level ($\beta = -0.23$, $p < .10$). However, this model, compared with the model without the interaction term (M8), explained an additional 4% variance (both $R^2$ and adjusted $R^2$) in team relational harmony. Thus, despite the interaction effect being only marginally significant (perhaps due to the sample size), I plotted the graph in Figure 8 and performed a simple slope test to examine if the simple slope for each of the two conditions (when the moderator was at 1 SD above and below the mean) would be significant (Aiken & West, 1991). The simple slope test showed that when leader interaction facilitation was high, the relationship between subgroup balance and team relational harmony was not significant (gradient of simple slope = -.19, n.s.). In contrast, when leader interaction facilitation was low, the relationship between subgroup balance and team relational harmony was both positive and statistically significant (gradient of simple slope = .27, $p < .05$). Such a result suggests that subgroup balance may play an important role in
impacting team relational harmony only when the team leader does not sufficiently facilitate team members’ interaction, providing support for Hypothesis 5.

Finally, I tested Hypotheses 6 and 7, regarding whether team relational harmony would mediate the effects of resource-based subgroup configurational properties on team performance. Hypothesis 6 proposed that the indirect curvilinear effect of number of subgroups on team performance via team relational harmony is weaker when leader interaction facilitation behavior is high. This hypothesis predicts a non-linear indirect effect, and Hayes and Preacher (2010) and Stolzenberg (1980) suggest that a test of instantaneous indirect effects is most appropriate (see the brief review of this method in Chapter 5). Since the nature of the relationship between an independent variable (X) and a mediator (M) is non-linear and the effect of X on M changes when X changes, the indirect effect of X on the dependent variable (Y) can only be quantified given a certain value of X. In this sample, the independent variable—the number of subgroups—had only five values (2, 3, 4, 5, and 6) in my sample, and thus I performed an instantaneous indirect effects test in Mplus 6.12 and present the results in Table 6. These results show that when leader interaction facilitation behavior was high, the instantaneous indirect effects became stronger when the number of subgroups increased. All of them were positive but not significant. In contrast, when leader interaction facilitation behavior was low, the instantaneous indirect effects changed from positive to negative when the number of subgroups increased. Thus, Hypothesis 6 was supported.

Hypothesis 7 proposed that the indirect relationship between balance of subgroups and team performance, through team relational harmony, is moderated by leader interaction facilitation behavior, such that the indirect relationship is stronger when
leaders are low on interaction facilitation behavior. To test this hypothesis (involving a first-stage moderated mediation model), Edwards and Lambert’s (2007) procedures were followed. A review of the procedure can be found in Chapter 5. As shown in Table 7, the indirect effect of subgroup balance on team performance via relational harmony was positive and significant only when leader interaction facilitation was low (estimate = .05; the 95% CI excluded 0). When leader interaction facilitation was high, the indirect effect was negative but not significant (estimate = -.04; the 95% CI contained 0). Thus, Hypothesis 7 was supported.
The relationships among team diversity, team faultlines, intra-team conflict, and team performance have been extensively studied in the literature of work teams (Jehn, Northcraft, & Neale, 1999; De Dreu & Weingart, 2003; van Knippenberg, De Dreu, & Homan, 2004; Jehn & Bezrukova, 2010). Social identity theory (Tajfel, 1978; Tajfel & Turner, 1986) has been mostly drawn upon to support the positive relationships among demographic diversity (e.g., gender, age, and race), identity-based faultlines, and relationship conflict, as well as their negative impact on team performance. An information processing view (Tushman & Nadler, 1978; Hinsz et al., 1997) is often used to support the positive relationships among task-related diversity (e.g., educational background, functional background), knowledge-based faultlines, and task conflict, as well as their effects on team performance. Although task-related diversity has been found generally desirable, the ubiquity of incompatibilities in social identities and social hierarchy (e.g., power and status, Magee & Galinsky, 2008) among team members can cause intractable conflicts and have the potential to impair team harmony (Fiol, Pratt, & O'Connor, 2009).

In this dissertation, I argue that teams would profit from knowing not only how to avoid relationship conflict but how to embrace incompatibilities while executing better management to facilitate positive team interactions. Therefore, this research has advanced research on team diversity from a more positive perspective by (a) introducing the notion of relational harmony and (b) demonstrating how team relational harmony can be
maintained and team performance enhanced despite the presence of subgroups—particularly subgroups based on team members’ resource differentials.

**Discussion of Major Findings**

The present research integrated the extant literature on tensions and harmony (Leung et al., 2011; Earley, 1997) and developed the construct of relational harmony in organizational settings. The definition of relational harmony proposed in this research—the coexistence of two or more entities in a state of mutual acceptance and benevolence—involves four key elements: coexistence, mutuality, acceptance, and benevolence.

Moreover, the current study explicated why relational harmony in teams matter and how this emergent team state (i.e., team relational harmony) differs from relational harmony of a dyadic nature. Relational harmony is of vital importance particularly for work teams. This is because teams consist of people who are different. Without team members’ accepting and appreciating one another’s individuality and uniqueness as a person, team unity cannot be achieved. Additionally, team harmony is “team-centered”. While interpersonal harmony only requires that both parties take into account one another’s interests, team harmony requires that all team members act to serve the best interests of the rest of the team or those of the collective.

After the notion of team relational harmony was introduced, this research continued to develop a theoretical framework concerning how team relational harmony may be affected in the presence of subgroups. In particular, this research focused on resource-based subgroups, which are subgroups formed along team members’ differences in their abilities to claim resources (Carton & Cummings, 2012), or simply speaking, subgroups based on power and status differentials. The existence of social hierarchy in
teams implies power and dominance and can potentially create asymmetrical and imbalanced social exchanges among team members. Therefore, it is logical to speculate that team harmony may be threatened and team effectiveness hampered. However, my analysis based on social dominance theory, social exchange theory, the theory of subgroups, the behavioral approach to leadership, and substitutes for leadership theory suggests that in teams where resource-based subgroups are present, good team performance can still be attained through harmonious team interactions. Specifically, subgroup configurational properties, including the number of subgroups and the variation of subgroups in size (i.e., subgroup balance), should be considered when managing team relationships.

A deductive approach to developing an instrument for relational harmony was used (Hinkin, 1998). Data obtained from three independent samples were subjected to a content adequacy assessment, an EFA, and a CFA, respectively. All these procedures yielded satisfactory results, increasing confidence in the construct validity of my new measure both at the dyadic level and the team level.

Hypotheses were tested on complete information from 320 employees and their leaders in 46 teams from three companies. The findings demonstrated that there appeared to be an inverted U-shaped curvilinear relationship between the number of resource-based subgroups and team relational harmony such that teams with a moderate number of resource-based subgroups had the highest relational harmony. This curvilinear effect was moderated by leaders’ interaction facilitation behavior in such a way that the inverted U-shape only appeared when leader interaction facilitation was low. When leaders engaged in a high level of interaction facilitation behavior, teams with more resource-based
subgroups displayed higher relational harmony. Although the current results did not provide support for a positive relationship between the balance of resource-based subgroups and team relational harmony, leader interaction facilitation behavior changed the nature of the above relationship such that the relationship turned from significantly positive to negative (although not significant) when leader interaction facilitation behavior varied from low to high. Team relational harmony, in turn, translated the above effects to influence team performance positively. Taken together, these findings show the importance of properly configuring teams as well as engaging in suitable leadership behaviors in dealing with team hierarchy and building high-performing teams.

Contrary to Hypothesis 1 concerning the positive relationship between resource-based subgroup faultline strength and team relational harmony, the results showed that after controlling for the effect of seven important control variables, faultline strength did not explain significant additional variance in team relational harmony despite its coefficient being positive in the model. Such a finding is subject to further verification, yet an alternative explanation could lie in the fact that within-subgroup identification is too strong for the subordinate subgroups to legitimize the existence of social hierarchy in teams. These subordinate subgroup members may not be willing to accept the status quo and can therefore act less benevolently towards the dominant subgroup, reducing the overall team relational harmony. Also, the results did not support a general positive relationship between the balance of subgroups and team relational harmony (Hypothesis 3). One implication of this is that study’s subjects may not be opposed to power centralization, and team relational harmony may not be necessarily hampered even if subgroups become more imbalanced in size. I speculate that this may be due in some part
to the high power distance orientation that Chinese people typically hold (Hofstede, 1980). In high power distance societies, people accept and expect that power is distributed unequally. Thus, a more equal power distribution does not further contribute to team relational harmony.

**Theoretical Contributions**

First, the current research is among the first to conceptualize and operationalize the construct of relational harmony in organizational research. My deductive approach to developing such a construct was based on literatures on the Greek and Chinese philosophy literatures (Li, 2008), discussion of conflict and harmony in cultural psychology (Leung et al., 2002; Leung et al., 2011), and a social exchange perspective (Blau, 1964; Foa & Foa, 1974). I particularly adopted Earley’s (1997) core element of harmony as a social exchange construct and refined it to reflect a dynamic balanced state, defined as the coexistence of two or more entities in a state of mutual acceptance and benevolence. The elements “coexistence” and “mutuality” capture the extent to which social exchange occurs, and the elements “acceptance” and “benevolence” denote the content domains to be exchanged between or among the participating parties.

Second, this research sheds additional light on the importance of relational harmony in work teams. The fact that team relational harmony can translate the effects of subgroups to influence team performance positively has suggested a positive effect of team relational harmony on team outcomes. Additionally, team relational harmony may be thought of as one of the many forms of social integration, defined as the degree to which individuals are psychologically linked to others in a group (O'Reilly, Caldwell, & Barnett, 1989). Based on Katz and Kahn’s (1978) conceptualization, attraction to the
group, satisfaction with other members of the group, and social interaction among group members are the three major components of social integration, with the first two components being extensively studied in prior research on group cohesiveness and group satisfaction (e.g., Mullen & Copper, 1994; Beal, Cohen, Burke, & McLendon, 2003). Yet, less research attention has been paid to the specific social interaction aspect of social integration. Since team relational harmony can be understood as the extent to which all team members mutually accept each other’s uniquenesses while serving each other’s or the collective’s best interests, it reflects a specific pattern of social interaction or social exchange among team members.

Third, this study’s development of substantive theoretical arguments concerning relationships among subgroups, team relational harmony, and team performance has extended the extant research on subgroups in organizational settings. The study of subgroups (from a team diversity perspective) is still in its infancy, with one stream focusing on examining the impact of faultline strength on team processes and performance (see Thatcher & Patel, 2011 and Thatcher & Patel, 2012 for a review) and the other focusing on the impact of configurational properties of subgroups (i.e., number of subgroups, Polzer et al., 2006 and the balance of subgroups, Mannix, 1993; Carton & Cummings, 2013). The current research, by examining the effects of the two configurational properties of resource-based subgroups (i.e., the number of subgroups and subgroup balance) on team relational harmony and team performance, is among the first to examine relationships among the configurational properties of resource-based subgroups, team processes, and team outcomes (Carton & Cummings, 2013) based on the recently proposed theory of subgroups (Carton & Cummings, 2012). Such an
examination also contributes to our understanding of how the potential existence of subgroups (based on hypothetical faultlines) matters in the emergence of harmonious team interactions and desired team performance.

Fourth, the current study results associated with the effects of configurational properties of resource-based subgroups are in line with and are able to extend social dominance theory (Sidanius, 1993; Sidanius & Pratto, 1999; Sidanius et al., 2004). Social dominance theory posits that asymmetries in perceptions of fairness exist when a dominant subgroup (who controls the majority of the resources) and a subordinate subgroup appears. On the one hand, the findings that an increase in the number of resource-based subgroups is positively related to team relational harmony when the number of subgroups is small to moderate are congruent with SDT in that with a growing number of resource-based subgroups, the tension between the dominant groups and the subordinate groups becomes less salient and perceptions of unfairness are reduced. On the other hand, the inverted U-shaped curvilinear relationship between the number of subgroups and team relational harmony suggests a potential optimal point beyond which SDT may not apply.

Fifth, the results have shown a moderating role that leader interaction facilitation behavior plays in the curvilinear relationship between the number of subgroups and team relational harmony. Such a finding is consistent with the recent discussion of faultline activation (Jehn & Bezrukova, 2010; Ren, Gray, & Harrison, 2015). Leader interaction facilitation, through suppressing the activation of dormant resource-based faultlines, is found to be especially useful in alleviating the negative effect caused by having a large number of subgroups.
Last but not least, the current study has re-examined the role of a behavioral measure of leadership that has been forgotten by the field of management and leadership for decades. Drawing upon the earlier Ohio State Leadership Studies (Hemphill, 1950; Halpin & Winer, 1957) and its subsequent elaboration (Bowers & Seashore, 1966), this research suggests that a leader’s interaction facilitation behavior plays a pivotal role in managing team diversity, especially in suppressing the activation of subgroups in teams.

**Methodological Strengths**

A few methodological strengths increase confidence in the research findings. First, the development of a scale for the construct of relational harmony followed Hinkin’s (1998) guidelines with a deductive approach. A content adequacy assessment (Study 1) (Schriesheim et al., 1993) with the judge panel ANOVA approach suggested by Hinkin and Tracey (1999) was conducted to (1) quantitatively establish theoretical discriminant validity among related constructs and (2) delete items that were not sound representations of relational harmony (whose definition was based on theory). The scale development proceeded with two additional studies (Studies 2 and 3) to establish satisfactory psychometric properties (internal reliability and convergent and discriminant validity) of the new measure of relational harmony.

Second, data were collected from both the leaders and the team members across three time points, procedurally mitigating potential common method bias concerns (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). A high team response rate (90%) further increases confidence in the results.

Third, configurational properties of subgroups were computed based on the subgroup algorithm developed by Meyer and Glenz (2013). The employment of such a
sophisticated method has allowed me to examine the effect of subgroups on team processes and team outcomes in a field setting, as opposed to a laboratory one where different configurations of subgroups need to be manipulated (e.g., Pearsall et al., 2008). Therefore, the current research may have reasonable external validity (Campbell, 1957) by testing a series of theoretical predictions using real teams in real organizations.

**Implications for Practice**

First, this study calls for a shift of managerial focus from avoiding interpersonal incompatibilities to facilitating harmonious team interactions despite individual differences. It has been suggested that positive social interactions at work are associated with immediate and enduring effects on physical health (Heaphy & Dutton, 2008). Therefore, it will be in both the employers and the employees’ interests to ensure harmonious social interactions at work.

Second, given that subgroups based on power and status differentials (social hierarchy) are prevalent in work teams (Magee & Galinsky, 2008), one of the chief challenges that team leaders face is how to effectively set up a team and manage such subgroups. Findings from this research have suggested that team leaders should be alert to the configurational properties of resource-based subgroups. The inverted U-shaped curvilinear relationships between the number of resource-based subgroups and team relational harmony found in this study suggests that there may be an optimal number of resource-based subgroups that results in the highest level of team relational harmony. This number, in this particular study, is between three and four (as shown in Table 6 and Figures 6 and 7). Managers may want to increase team size to a certain point and intentionally let more resource-based subgroups form. However, creating a large team
also has its drawbacks. As a team continues to expand, it attracts more individuals who are of different backgrounds and who may need to compete with each other in accessing finite resources (such as the leader’s attention, promotion opportunities, and materials and information needed to carry out work). A greater number of resource-based subgroups may appear, hampering team relational harmony and hindering team task accomplishment. Managers should be attentive to such issues and formulate appropriate policies pertaining to personnel selection, resource allocation, and task assignments. In addition, managers need to monitor the process through which behavioral norms in regard to resource exchanges are developed, with the purpose of maximizing the benefits associated with power and status differentials in teams.

Third, as a team leader, a general absence of team-oriented leadership can be hazardous. As work teams become increasingly diverse, differences among team members can quickly engender misunderstanding, resentfulness, and even animosity within the team. Consequently, it is the manager’s role to suppress the breakup of a team or to deal with the tensions when a team has already split into smaller subgroups. Team managers should develop their team-oriented leadership behaviors, such as facilitating team interactions, encouraging communications, and coordinating a variety of activities to allow the factions to resolve their differences.

Limitations

Like all research, this dissertation has its limitations. First, although the initial item pool for relational harmony was developed in English, followed by a carefully conducted content adequacy assessment in English, the subsequent EFA and CFA were performed with two independent samples collected in China and with surveys translated
into Chinese. Although a careful translation and back-translation procedure was followed to assure the English-Chinese isomorphism of the items (Brislin, 1986), measurement equivalence could not be quantitatively established. Thus, further validation of this scale is needed.

Second, the sample of the primary study (for hypotheses testing) is from China where social harmony and interpersonal harmony are greatly valued. Readers should interpret the results with caution, especially when trying to generalize the research findings to other cultural contexts. However, it is my intention to introduce this widely shared notion from the East to the mainstream management literature worldwide. I thus encourage further examination of this concept in a western culture.

Third, team relational harmony was operationalized as team members’ shared perceptions of the extent to which all team members mutually accept each other’s uniquenesses while serving the best interests of each member or those of the collective. It was measured with a referent-shift approach (Chan, 1998) at the team level. However, team researchers have recently called for a consideration of the microdynamic nature of teams (Humphrey & Aime, 2014). Specifically, these authors argue that taking into account the relational and organizing nature of teams can be especially insightful in understanding teamwork. Therefore, it would be desirable to capture relational harmony at a micro-level (i.e., interpersonal or inter-subgroup level) and treat team relational harmony as an emergent state (Cronin, Weingart, & Todorova, 2011). Certainly, to test such an idea, it would require a round-robin data collection method using a social relations model (Kenny & La Voie, 1984). In addition, the organizing nature of a team implies that teamwork is in essence a dynamic process. Hence, a longitudinal design that
tracks the trajectory of team relational harmony changes, that investigates how relational
harmony is maintained or impaired as teams evolve over time, and that examines the
long-lasting effects of relational harmony on team outcomes will be especially desirable.

Fourth, although effort has been made to ensure discriminant validity between
relational harmony and other related constructs (i.e., intragroup conflict, group
cohesiveness, and coworker exchange) by using content adequacy assessment and CFA
procedures, the primary study examining the relations between team relational harmony
and team performance did not control for the effects of these factors. The uniqueness of
team relational harmony in influencing other team processes and outcomes above and
beyond such widely researched constructs as team cohesiveness and team satisfaction
therefore needs investigation.

The fifth limitation is concerned with data that are cross-sectional in nature.
Although data were collected at three time points from multiple sources, causal
conclusions are still not warranted. For example, it is likely that teams in which
relationships are more harmonious are less likely to split into subgroups despite the
power structure. Alternatively, it is likely that superior teams (e.g., teams with good
performance) are more attractive and receptive to powerful individuals, gradually
changing the power and status differentials within these teams. Therefore, to establish
causality, research that employs other study designs would be desired.

Finally, in this dissertation, I only used three disparity-related attributes as the
bases of resource-based subgroup faultlines. Recognizing that resources are of different
types (e.g., zero-sum versus unlimited, power versus status, etc.) and may have different
effects, a nuanced examination of how resource-based subgroups operate in teams would be desirable.

**Directions for Future Research**

This research suggests several intriguing areas for future research. First, although the primary concern for any work team is performance, there are other issues to which teams must be attentive. Thus, future research should expand the criteria of team relational harmony to include team learning (Edmondson, Bohmer, & Pisano, 2001), team decision making (Hollenbeck, Ilgen, Sego, Hedlund, Major, & Phillips, 1995), team creativity (Pearsall et al., 2008), and employee thriving at work (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005). In addition, as subgroup splits affect individual members of different subgroups in different ways (depending on unique intra-subgroup processes; Meyer, Shemla, Li, & Wegge, 2015), research with a focus on individual outcomes merits consideration.

Second, this research is concerned with predicting team relational harmony in the presence of social hierarchies as well as power and status differentials in teams. As subgroups are of different types and have different bases (Carton & Cummings, 2012, 2013; Harrison & Klein, 2007), the current research may stimulate further investigations of the impact of other types of subgroups on team relational harmony, as well as potential boundary conditions.

Third, relational harmony in this study was operationalized at the team level, with the purpose of contributing to the literature on teams and subgroups. As I have stressed in the limitations section, it would be especially desirable to examine harmonious interactions at the dyadic or the inter-subgroup level. At the dyadic level, researchers
need to examine whether the two parties see their relationship the same way (e.g., relational harmony congruence). Moreover, research will be advanced if relational harmony measured at the dyadic level and aggregated to the inter-subgroup level can be shown to converge with the measure of overall team relational harmony.

Fourth, in most of the research on group faultlines and subgroups, subgroups are conceptualized based on dormant hypothetical faultlines (Lau & Murnighan, 1998). However, it has been recently demonstrated that faultlines that are not activated (perceived by the team members) may not have an effect on team outcomes (Pearsall et al., 2008) and that suppressors in the environment may make the group appear to “crack” but not actually “break” (Chung et al., in press). Future research needs to further bridge the link between dormant faultlines and activated subgroup perceptions (Jehn & Bezrukova, 2010). Additionally, further research may explore whether the current research findings hold or need refinement when subgroups have already been activated. This addition would be of great value to both theory and practice because only when intractable conflicts are managed well can harmony last (Fiol et al., 2009).

Fifth, I encourage leadership researchers to join the conversation concerning managing diversity and ensuring team harmony. In the current research, leader interaction facilitation behavior has interacted with the configurational properties of subgroups to influence team relational harmony and team performance. The preliminary empirical findings regarding conditions under which leaders should or should not engage in interaction facilitation behaviors are practically insightful. Future research may consider other leadership constructs as neutralizers, enhancers, or substitutes of complex team configurations to influence team relational harmony. For example, authentic
leadership may be able to help bridge different subgroups by balancing complex relationships. As captured in one of the authentic leadership dimensions (i.e., balanced processing), such leaders usually analyze all relevant data objectively before making a decision, listen to alternative perspectives, and solicit views that challenge deeply held positions (Neider & Schriesheim, 2011). Therefore, team members are more likely to develop mutual acceptance and benevolence toward each other because they now have a clearer understanding of their teammates as well as their own standpoints. Empowering leadership (Zhang & Bartol, 2010), as another example, is arguably another important leadership style worth examining. Previous studies showed that empowering leadership can elicit the volitional motivation of an individual (Zhang & Bartol, 2010; Deci & Ryan, 1985) by affecting his or /her psychological empowerment (i.e., felt meaning, competence, self-determination, and influence) (Spreitzer, 1995). Such motivation may help overcome the potential uncomfortableness engendered by dissonance or differences when interacting with other team members, thereby improving the level of team relational harmony.

Finally, the notion of relational harmony in the workplace should be studied more broadly, with the first step being to develop its nomonological network. Despite fruitful research opportunities, I caution that researchers who intend to explore this area should not diverge from the construct’s reliance on social exchange principles.

Conclusion

This research identifies and explains a prevalent and important organizational phenomenon—team members staying in harmony despite the potential tensions caused by resources differentials within teams. The results demonstrate how the number of
subgroups and subgroup balance interact with leader interaction facilitation behavior to directly influence team relational harmony and indirectly influence team performance. I hope that the current study encourages more future research to delve into various phenomena associated with relational harmony at the intra-subgroup, inter-subgroup, and inter-group levels.
REFERENCES


### TABLE 1

Summary of Hypotheses

<table>
<thead>
<tr>
<th>Hyp.</th>
<th>Predictor (X)</th>
<th>Outcome (Y)</th>
<th>Moderator (Z)</th>
<th>Mediator (M)</th>
<th>Predicted Relationship</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Faultline strength</td>
<td>TRH</td>
<td>N/A</td>
<td>N/A</td>
<td>Positive</td>
<td>Relational harmony is higher in teams where multiple status and power-related attributes are consistent across subgroup members than in teams where these attributes are not consistent across subgroup members.</td>
</tr>
<tr>
<td>2</td>
<td>Number of subgroups</td>
<td>TRH</td>
<td>N/A</td>
<td>N/A</td>
<td>Curvilinear (Inverted U-shaped)</td>
<td>Team relational harmony is higher when there are three subgroups than two (a dominant and a subordinate subgroup); Harmony does not keep increasing but at some point will decrease when teams are split into many subgroups. Depending on the team size, the turning point may vary.</td>
</tr>
<tr>
<td>3</td>
<td>Balance of subgroups</td>
<td>TRH</td>
<td>N/A</td>
<td>N/A</td>
<td>Positive</td>
<td>Team relational harmony is higher when subgroups are more balanced in size. For example, for a team of 6 members, a subgroup configuration of 3-3 is superior to one of 2-4; for a team of 8 members, a subgroup configuration of 2-3-3 is superior to one of 2-2-4.</td>
</tr>
<tr>
<td>4</td>
<td>Number of subgroups</td>
<td>TRH</td>
<td>LIF</td>
<td>N/A</td>
<td>Z moderates the inverted U-shaped relationship between X and Y</td>
<td>When team leader does not sufficiently engage in interaction facilitation behavior, which makes the activation of subgroup faultlines more likely, the inverted U-shaped curvilinear relationship between the number of subgroups and team relational harmony will be more pronounced. When leader interaction facilitation is high, the above curvilinear relationship is weaker.</td>
</tr>
<tr>
<td></td>
<td>5 Balance of subgroups</td>
<td>TRH</td>
<td>LIF</td>
<td>N/A</td>
<td>Z moderates the positive relationship between X and Y When team leader does not sufficiently engage in interaction facilitation behavior (compared with the situation where the team leader demonstrates high interaction facilitation behavior), the activation of subgroup faultlines becomes more likely, and the balance of subgroups will have a more positive effect on team relational harmony.</td>
<td></td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>6 Number of subgroups</td>
<td>Team Performance</td>
<td>LIF</td>
<td>TRH</td>
<td>Z moderates the indirect curvilinear relationship between X and Y through M When team leader does not sufficiently engage in interaction facilitation behavior, which makes the activation of subgroup faultlines more likely, the inverted U-shaped curvilinear relationship between the number of subgroups and team performance through team relational harmony will be more pronounced. When leader interaction facilitation is high, the above indirect curvilinear relationship is weaker.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 Balance of subgroups</td>
<td>Team Performance</td>
<td>LIF</td>
<td>TRH</td>
<td>Z moderates the indirect effect of X on Y through M When team leader does not sufficiently engage in interaction facilitation behavior (compared with the situation where the team leader demonstrates high interaction facilitation behavior), the activation of subgroup faultlines becomes more likely, and the balance of subgroups will have a more positive indirect effect on team performance through team relational harmony.</td>
<td></td>
</tr>
</tbody>
</table>

*Note. Hyp. = hypothesis, TRH = team relational harmony, LIF = leader interaction facilitation*
## TABLE 2

Analysis of Variance for Item Content Validity

<table>
<thead>
<tr>
<th>Item</th>
<th>ACC mean</th>
<th>BEN mean</th>
<th>Overall F</th>
<th>ACC vs. BEN (or BEN vs. ACC)</th>
<th>ACC vs. RC (or BEN vs. RC)</th>
<th>ACC vs. COH (or BEN vs. COH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.11</td>
<td>1.67</td>
<td>11.90*</td>
<td>2.44* (.43)</td>
<td>1.61* (.43)</td>
<td>1.83* (.43)</td>
</tr>
<tr>
<td>2</td>
<td>4.78</td>
<td>1.78</td>
<td>24.31*</td>
<td>3.00* (.40)</td>
<td>2.61* (.40)</td>
<td>2.50* (.40)</td>
</tr>
<tr>
<td>3</td>
<td>4.50</td>
<td>2.06</td>
<td>15.25</td>
<td>2.44* (.42)</td>
<td>1.83* (.42)</td>
<td>2.39* (.42)</td>
</tr>
<tr>
<td>4</td>
<td>4.72</td>
<td>1.83</td>
<td>20.52*</td>
<td>2.89* (.40)</td>
<td>2.22* (.40)</td>
<td>2.33* (.40)</td>
</tr>
<tr>
<td>5</td>
<td>2.61</td>
<td>3.67</td>
<td>4.51*</td>
<td>-1.06* (.47)</td>
<td>.22* (.47)</td>
<td>.56* (.47)</td>
</tr>
<tr>
<td>6</td>
<td>3.50</td>
<td>2.83</td>
<td>1.95</td>
<td>.67* (.46)</td>
<td>.61* (.46)</td>
<td>1.11* (.46)</td>
</tr>
<tr>
<td>7</td>
<td>4.22</td>
<td>2.28</td>
<td>11.18</td>
<td>1.94* (.42)</td>
<td>1.67* (.42)</td>
<td>2.22* (.42)</td>
</tr>
<tr>
<td>8</td>
<td>3.56</td>
<td>3.33</td>
<td>5.33*</td>
<td>.22* (.44)</td>
<td>1.22* (.44)</td>
<td>1.44* (.44)</td>
</tr>
<tr>
<td>9</td>
<td>2.44</td>
<td>4.17</td>
<td>7.48*</td>
<td>1.72* (.47)</td>
<td>1.89* (.47)</td>
<td>1.78* (.47)</td>
</tr>
<tr>
<td>10</td>
<td>2.00</td>
<td>4.61</td>
<td>17.25*</td>
<td>2.61* (.42)</td>
<td>2.33* (.42)</td>
<td>2.39* (.42)</td>
</tr>
<tr>
<td>11</td>
<td>2.22</td>
<td>4.33</td>
<td>20.99*</td>
<td>2.11* (.36)</td>
<td>2.50* (.36)</td>
<td>2.33* (.36)</td>
</tr>
<tr>
<td>12</td>
<td>2.17</td>
<td>3.83</td>
<td>11.62*</td>
<td>1.67* (.38)</td>
<td>1.83* (.38)</td>
<td>1.89* (.38)</td>
</tr>
<tr>
<td>13</td>
<td>2.22</td>
<td>4.00</td>
<td>11.57</td>
<td>1.78* (.39)</td>
<td>1.94* (.39)</td>
<td>1.94* (.39)</td>
</tr>
<tr>
<td>14</td>
<td>3.50</td>
<td>3.17</td>
<td>2.64†</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*Note. N = 18. ACC = mutual acceptance, BEN = mutual benevolence, RC = relationship conflict, COH = group cohesiveness. Bolded number indicates that this item has significantly higher mean rating on its correspondent dimension than on any other dimension. The last three columns show the mean differences between an item’s mean on its correspondent dimension and that on other dimensions, with the standard errors shown in the parentheses. Item 14 is excluded in the mean differences analysis because it is a general description of relational harmony and does not assess any single dimension. Item 14’s mean ratings are 2.5 on RC and 2.89 on COH.

†p < .10; *p < .05.
<table>
<thead>
<tr>
<th>Item</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ben1: We stand up for each other</td>
<td>.81</td>
</tr>
<tr>
<td>RHT: I would describe the relationship between us as harmonious</td>
<td>.80</td>
</tr>
<tr>
<td>Ben5: We take into account the other party’s welfare when making</td>
<td>.79</td>
</tr>
<tr>
<td>decisions that may affect the other party</td>
<td></td>
</tr>
<tr>
<td>Acc2: We accept each other’s unique or idiosyncratic characteristics</td>
<td>.76</td>
</tr>
<tr>
<td>Ben4: We make sure that one person's work behavior does not hurt the</td>
<td>.74</td>
</tr>
<tr>
<td>other person's well-being</td>
<td></td>
</tr>
<tr>
<td>Acc1: We are tolerant of each other</td>
<td>.73</td>
</tr>
<tr>
<td>Ben2: We try to benefit rather than harm each other</td>
<td>.71</td>
</tr>
<tr>
<td>Acc4: We both try to accept the other person’s point of view</td>
<td>.68</td>
</tr>
<tr>
<td>Acc3: We allow each other to hold our own unique opinions and</td>
<td>.66</td>
</tr>
<tr>
<td>perspectives</td>
<td></td>
</tr>
<tr>
<td>Acc7: We let each other show our own individuality</td>
<td>.66</td>
</tr>
<tr>
<td>Ben3: We prioritize the other person's goals</td>
<td>.59</td>
</tr>
<tr>
<td>Coh²: The members of my work team regard each other as friends.</td>
<td>.51</td>
</tr>
<tr>
<td>RC3: How much emotional conflict is there in your work team?</td>
<td>-.07</td>
</tr>
<tr>
<td>PC1: How often are there disagreements about who should do what in</td>
<td>-.17</td>
</tr>
<tr>
<td>your work team?</td>
<td></td>
</tr>
<tr>
<td>TC3: How often do people in your work team have conflicting</td>
<td>-.09</td>
</tr>
<tr>
<td>opinions about the project you are working on?</td>
<td></td>
</tr>
<tr>
<td>PC2: How much conflict is there in your team about task</td>
<td>-.23</td>
</tr>
<tr>
<td>responsibilities?</td>
<td></td>
</tr>
<tr>
<td>PC3: How often do you disagree about resource allocation in your</td>
<td>-.18</td>
</tr>
<tr>
<td>work team?</td>
<td></td>
</tr>
<tr>
<td>TC1: How much conflict of ideas is there in your work team?</td>
<td>-.01</td>
</tr>
<tr>
<td>TC2: How frequently do you have disagreements within your work</td>
<td>-.09</td>
</tr>
<tr>
<td>team about the task of the project you are working on?</td>
<td></td>
</tr>
<tr>
<td>RC2: How often do people get angry while working in your team?</td>
<td>-.08</td>
</tr>
<tr>
<td>RC1: How much relationship tension is there in your work team?</td>
<td>-.05</td>
</tr>
<tr>
<td>CWX3: Regardless of how much formal authority this coworker has</td>
<td>.26</td>
</tr>
<tr>
<td>built into his or her position, he or she would be personally inclined to use power to help me solve problems in my work</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Statement</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CWX4:</td>
<td>Regardless of the amount of formal authority this coworker has, I can count on him or her to ‘bail me out’ at his or her expense when I really need it</td>
</tr>
<tr>
<td>CWX5:</td>
<td>I have enough confidence in this coworker that I would defend and justify his or her decisions if he or she were not present to do so</td>
</tr>
<tr>
<td>CWX6:</td>
<td>My working relationship with this coworker is good</td>
</tr>
<tr>
<td>CWX2:</td>
<td>I think that this coworker understands my problems and needs</td>
</tr>
<tr>
<td>CWX1:</td>
<td>I think I usually know where I stand with this coworker….I usually know how satisfied this coworker is with what I do</td>
</tr>
</tbody>
</table>

*Note. Acc = mutual acceptance, Ben = mutual benevolence, RHT = item 14 of the relational harmony initial item pool, Coh = group cohesiveness, TC = task conflict, RC = relationship conflict, PC = process conflict, CWX = coworker exchange quality

*Item with cross-loading (item Coh3).
TABLE 4  
Descriptive Statistics and Correlations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Team size</td>
<td>7.67</td>
<td>2.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Team response rate</td>
<td>.90</td>
<td>.13</td>
<td>-.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Organization (Dummy1)</td>
<td>.26</td>
<td>.44</td>
<td>.61**</td>
<td>-27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4. Organization (Dummy2)</td>
<td>.37</td>
<td>.49</td>
<td>-21</td>
<td>.22</td>
<td>-.46**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5. Team autonomy</td>
<td>2.00</td>
<td>.63</td>
<td>-.13</td>
<td>.09</td>
<td>-.32*</td>
<td>.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Leader team tenure</td>
<td>51.91</td>
<td>45.66</td>
<td>.39**</td>
<td>.00</td>
<td>.21</td>
<td>-.39**</td>
<td>.01</td>
<td>.33*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8. Subgroup faultline strength</td>
<td>.52</td>
<td>.15</td>
<td>.05</td>
<td>.14</td>
<td>-.00</td>
<td>.41**</td>
<td>.07</td>
<td>-.33*</td>
<td>-.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Number of subgroups</td>
<td>2.52</td>
<td>.89</td>
<td>.36*</td>
<td>.25</td>
<td>-.13</td>
<td>-.20</td>
<td>-.08</td>
<td>.21</td>
<td>.14</td>
<td>-.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Balance of subgroups</td>
<td>-1.59</td>
<td>1.19</td>
<td>-.42**</td>
<td>.20</td>
<td>-.39**</td>
<td>.08</td>
<td>.09</td>
<td>.10</td>
<td>-.29*</td>
<td>-.07</td>
<td>.31*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. LIF</td>
<td>4.09</td>
<td>.47</td>
<td>-.13</td>
<td>.28</td>
<td>-.34*</td>
<td>.68**</td>
<td>.25</td>
<td>-.51**</td>
<td>-.39**</td>
<td>.38</td>
<td>.03</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. LIF (SD)</td>
<td>.66</td>
<td>.34</td>
<td>.15</td>
<td>-.19</td>
<td>.26</td>
<td>-.11</td>
<td>-.25</td>
<td>.17</td>
<td>.15</td>
<td>-.08</td>
<td>-.29</td>
<td>-.14</td>
<td>-.60**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Relational harmony</td>
<td>4.04</td>
<td>.46</td>
<td>-.15</td>
<td>.30*</td>
<td>-.26</td>
<td>.63**</td>
<td>.25</td>
<td>-.46**</td>
<td>-.31*</td>
<td>.39**</td>
<td>.03</td>
<td>.12</td>
<td>.72**</td>
<td>-.43**</td>
<td></td>
</tr>
<tr>
<td>14. Team performance</td>
<td>4.16</td>
<td>.57</td>
<td>-.20</td>
<td>.28</td>
<td>-.11</td>
<td>.32*</td>
<td>.29</td>
<td>-.18</td>
<td>-.34*</td>
<td>-.10</td>
<td>-.14</td>
<td>.16</td>
<td>.34*</td>
<td>-.13</td>
<td>.47**</td>
</tr>
</tbody>
</table>

Note. N = 46 teams. SD = standard deviation, LIF = leader interaction facilitation. Tenure is coded in month.

* p < .05;  ** p < .01.
TABLE 5  
Hierarchical Multiple Regressions for Team Relational Harmony

<table>
<thead>
<tr>
<th>Predictor</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team size</td>
<td>-.00</td>
<td>.00</td>
<td>-.24</td>
<td>-.04</td>
<td>.01</td>
<td>-.06</td>
<td>-.31</td>
<td>-.07</td>
<td>-.07</td>
</tr>
<tr>
<td>Team response rate</td>
<td>.20</td>
<td>.18</td>
<td>.09</td>
<td>.05</td>
<td>.18</td>
<td>.00</td>
<td>-.14</td>
<td>.09</td>
<td>.17</td>
</tr>
<tr>
<td>Organization (Dummy1)</td>
<td>.11</td>
<td>.07</td>
<td>.30</td>
<td>.10</td>
<td>.09</td>
<td>.11</td>
<td>.29</td>
<td>.19</td>
<td>.28</td>
</tr>
<tr>
<td>Organization (Dummy2)</td>
<td>.54**</td>
<td>.47</td>
<td>.61**</td>
<td>.48*</td>
<td>.48'</td>
<td>.25</td>
<td>.29</td>
<td>.34</td>
<td>.39†</td>
</tr>
<tr>
<td>Team autonomy</td>
<td>.11</td>
<td>.12</td>
<td>.12</td>
<td>.11</td>
<td>.11</td>
<td>.08</td>
<td>.13</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td>Leader age</td>
<td>-.04</td>
<td>-.01</td>
<td>-.08</td>
<td>-.15</td>
<td>-.03</td>
<td>-.12</td>
<td>-.27</td>
<td>-.04</td>
<td>-.03</td>
</tr>
<tr>
<td>Leader team tenure</td>
<td>-.11</td>
<td>-.12</td>
<td>-.04</td>
<td>-.05</td>
<td>-.10</td>
<td>.04</td>
<td>.06</td>
<td>.03</td>
<td>.05</td>
</tr>
<tr>
<td>Leader facilitation (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Independent variables</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faultline strength</td>
<td>.15</td>
<td>.11</td>
<td>.12</td>
<td>.15</td>
<td>.07</td>
<td>.15</td>
<td>.09</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Number of subgroups (NB)</td>
<td>.28</td>
<td>.65*</td>
<td>.57</td>
<td>.84**</td>
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<td></td>
<td></td>
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<tr>
<td>NB²</td>
<td>-.56*</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Balance of subgroups</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>LIF</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interaction terms</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NB × LIF</td>
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<td></td>
<td></td>
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<tr>
<td>NB² × LIF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance × LIF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall $R^2$</td>
<td>.45</td>
<td>.47</td>
<td>.50</td>
<td>.57</td>
<td>.47</td>
<td>.67</td>
<td>.74</td>
<td>.60</td>
<td>.64</td>
</tr>
<tr>
<td>Overall adjusted $R^2$</td>
<td>.35</td>
<td>.35</td>
<td>.37</td>
<td>.44</td>
<td>.34</td>
<td>.55</td>
<td>.62</td>
<td>.47</td>
<td>.51</td>
</tr>
<tr>
<td>$F$ change</td>
<td>4.42**</td>
<td>1.20</td>
<td>2.16</td>
<td>5.49'</td>
<td>.14</td>
<td>5.32*</td>
<td>3.97*</td>
<td>5.73**</td>
<td>3.22†</td>
</tr>
</tbody>
</table>

*Note.* N = 46 teams. SD = standard deviation, LIF = leader interaction facilitation. Tenure is coded in months.  
†$p < .10$; *$p < .05$; **$p < .01$. Models used to test hypotheses: M2 (H1), M3-4 (H2), M5 (H3), M6-7 (H4), M8-9 (H5)
TABLE 6

Instantaneous Indirect Effects (θₓ) of Number of Subgroups on Team Performance

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Level of moderator</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team relational harmony</td>
<td>High (+1SD)</td>
<td>.05</td>
<td>.14</td>
<td>.23</td>
<td>.32</td>
<td>.41</td>
</tr>
<tr>
<td></td>
<td>Low (-1SD)</td>
<td>.65</td>
<td>.21</td>
<td>-.24</td>
<td>-.68</td>
<td>-1.12</td>
</tr>
</tbody>
</table>

Note. Unstandardized coefficients are reported. Estimates of instantaneous indirect effects are based on θₓ = [(2a₅X + a₄)Z + 2a₂X + a₁]b; where x = number of subgroups, z = leader interaction facilitation, and b = the coefficient of the mediator in predicting team performance.

†p < .10; *p < .05.
### TABLE 7

Results for Moderated-Mediation Effect of Subgroup Balance on Team Performance

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Level of moderator</th>
<th>Direct effect</th>
<th>Indirect effect</th>
<th>Total effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team relational harmony</td>
<td>High (+1SD)</td>
<td>.11</td>
<td>-.04</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Low (-1SD)</td>
<td>-.07*</td>
<td>.05*</td>
<td>-.02</td>
</tr>
<tr>
<td>Differences</td>
<td></td>
<td>.19</td>
<td>.09</td>
<td>.10</td>
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</tbody>
</table>

*Coefficients are based on 1,000 bootstrap estimates. Tests of differences are based on bias-corrected confidence intervals from bootstrap estimates. Estimates of direct effects are based on \((b_{x6} + b_{x6}Z)\) and estimates of indirect effects are based on \((a_{x5} + a_{x5}Z)b_{M6}\). The independent variable is Balance of Subgroup and the moderator is Leader Interaction Facilitation behavior.

* \(p < .05\)
FIGURE 1

Research Model
FIGURE 2
An Illustration of Resource-Based Subgroup Faultline Strength

<table>
<thead>
<tr>
<th>Team 1</th>
<th>Strong faultline</th>
<th>Team 2</th>
<th>Weak faultline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Managerial position</td>
<td>LMX</td>
<td>Organizational tenure</td>
</tr>
<tr>
<td>A</td>
<td>Yes</td>
<td>High</td>
<td>Long</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>High</td>
<td>Long</td>
</tr>
<tr>
<td>C</td>
<td>No</td>
<td>Low</td>
<td>Short</td>
</tr>
<tr>
<td>D</td>
<td>No</td>
<td>Low</td>
<td>Short</td>
</tr>
<tr>
<td></td>
<td>Managerial position</td>
<td>LMX</td>
<td>Organizational tenure</td>
</tr>
<tr>
<td>A</td>
<td>Yes</td>
<td>High</td>
<td>Long</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>Low</td>
<td>Long</td>
</tr>
<tr>
<td>C</td>
<td>No</td>
<td>High</td>
<td>Short</td>
</tr>
<tr>
<td>D</td>
<td>No</td>
<td>Low</td>
<td>Short</td>
</tr>
</tbody>
</table>
FIGURE 3
An Illustration of the Data Matrix for An ANOVA Approach to Content Validation

<table>
<thead>
<tr>
<th>Person</th>
<th>Construct</th>
<th>Item 1</th>
<th>Item 2</th>
<th>…</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>2</td>
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<tr>
<td></td>
<td>3</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. The data matrix is structured with (n) x (j) rows and k columns, where

n = number of judges

j = number of theoretical constructs

k = number of items
FIGURE 4
Measurement Model of Team Relational Harmony and Intragroup Conflict

Note. $N = 122$. $\chi^2(50) = 101.29$, CFI = .96, TLI = .95, RMSEA = .09, SRMR = .06. All factor loadings and the correlation are standardized and are significant at a .001 level.
FIGURE 5
Measurement Model of Leader Interaction Facilitation Behavior and Team

Relational Harmony

Note. N = 320. $\chi^2(8) = 14.94$, CFI = .99, TLI = .99, RMSEA = .05, SRMR = .02. All factor loadings and the correlation are standardized and are significant at a .001 level.
FIGURE 6

Plot of Relationship between Number of Subgroups and Team Relational Harmony
FIGURE 7

Plot of Interaction Between Number of Subgroups and Leader Interaction Facilitation in Predicting Team Relational Harmony

![Graph showing the relationship between the number of subgroups and relational harmony.](image-url)
FIGURE 8

Plot of Interaction Between Subgroup Balance and Leader Interaction Facilitation in Predicting Team Relational Harmony
APPENDIX A

Initial Item Pool for the Relational Harmony Scale

*Mutual acceptance*

1. We are tolerant of each other (*)
2. We accept each other’s unique or idiosyncratic characteristics (*+)
3. We allow each other to hold our own unique opinions and perspectives (*)
4. We both try to accept the other party’s point of view (*)
5. We are considerate of the other party’s difficulties
6. We give in on arguments rather than risk making the other party mad
7. We let each other show our own individuality (*)
8. We are considerate of each other’s situation

*Mutual benevolence*

1. We stand up for each other (*+)
2. We try to benefit rather than harm each other (*)
3. We prioritize the other party’s goals (*)
4. We make sure that one party’s work behavior does not hurt the other party’s well-being (*)
5. We take into account the other party’s welfare when making decisions that may affect the other party (*)

*General description*

I would describe the relationship between us as harmonious (*+)

*Note.* * denotes items that were retained after the content adequacy assessment.

*+ denotes items that were included in the shortened version.*
APPENDIX B

Survey for Study 1: Content Validation of Measures of Relational Harmony

Content Validation of Measures of Relational Harmony

Dear subject matter expert:

I am currently doing my dissertation research that proposes the construct relational harmony. Relational harmony is defined as "The coexistence of two or more entities in a state of mutual acceptance and benevolence". I have developed an item pool that specifically assesses the two proposed components of relational harmony (mutual acceptance and benevolence). As part of my research, I will need to demonstrate that these items only measure relational harmony, and that relational harmony has unique meaning that has not been fully represented in other existing concepts, such as group cohesiveness or intragroup relationship conflict.

Hence, I am asking a favor. I would like to get a reasonable number of subject matter experts to complete a content assessment of the scale.

Completing these questions will take you about 10-15 minutes. Please note that your individual responses will be kept strictly confidential. Information gathered from this research will be presented as aggregated and anonymous data and no one (except me) will see anyone’s individual responses.

To show my appreciation, I will acknowledge all contributors by name in my dissertation and as a footnote in my [eventual] paper. If you would like to be acknowledged, please provide your name.

Name: __________________

Finally, if you have any questions about the survey or your participation in it, please do not hesitate to contact me. I know that your time is very valuable and wish to thank you in advance for your help on this important project.

Sincerely,

Yonghong Liu
Ph.D. Candidate
Management Department
School of Business
University of Miami
Email: yliu@bus.miami.edu
In this section, I would like you to indicate the degree to which you think each item is measuring the two components of the Relational Harmony concept. Again, please note that relational harmony is defined as "The coexistence of two entities in a state of mutual acceptance and benevolence."

Specifically,

Mutual acceptance is the extent to which neither entity tries to dominate or change the other or the other's situation (as a person).

Mutual benevolence is the extent to which both entities are disposed to or actually act beneficially toward each other.

Please use the following rating scale.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Completely or almost entirely</td>
</tr>
<tr>
<td>4</td>
<td>To a great extent</td>
</tr>
<tr>
<td>3</td>
<td>To a moderate or some extent</td>
</tr>
<tr>
<td>2</td>
<td>To a slight or very small extent</td>
</tr>
<tr>
<td>1</td>
<td>Not at all or almost not at all</td>
</tr>
</tbody>
</table>

EXAMPLE:

If an item—"my coworker is willing to help me if I need a special favor"—reads as if it were NOT measuring mutual acceptance at all (because it doesn't reflect mutuality or describe a state of acceptance) and might measure mutual benevolence to a slight extent (because it does describe coworker's benevolence but not a state of mutuality), you would check the option "1 = Not at all or almost not at all" under the first column, AND check the option "2 = to a slight or very small extent" under the second column. Thus, you will need to rate each item twice.

<table>
<thead>
<tr>
<th>Example: My coworker is willing to help me if I need a special favor.</th>
<th>This item measures &quot;mutual acceptance&quot;</th>
<th>This item measures &quot;mutual benevolence&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
If you have understood the instructions, please start rating. Should you have any questions, please do not hesitate to contact me for clarification before proceeding.

Please rate the extent to which each item is measuring mutual acceptance and mutual benevolence as part of the relational harmony scale.

5 = Completely or almost entirely
4 = To a great extent
3 = To a moderate or some extent
2 = To a slight or very small extent
1 = Not at all or almost not at all

<table>
<thead>
<tr>
<th>Item</th>
<th>This item measures &quot;mutual acceptance&quot;</th>
<th>This item measures &quot;mutual benevolence&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. We are tolerant of each other.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. We accept each other's unique or idiosyncratic characteristics.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. We allow each other to hold our own unique opinions and perspectives.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. We both try to accept the other party's point of view.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. We are considerate of the other party's difficulties.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. We give in on arguments rather than risk making the other party mad.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. We let each other show our own individuality.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. We are considerate of each other's situation.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. We stand up for each other.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10. We try to benefit rather than harm each other.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>11. We prioritize the other party's goals.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12. We make sure that one party's work behavior does not hurt the other party's well-being.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>13. We take into account the other party's welfare when making decisions that may affect the other party.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>14. I would describe the relationship between us as harmonious.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
Now, please rate the extent to which each of the above items is measuring group cohesiveness and intragroup relationship conflict. Please use the following definitions of the two terms while evaluating.

**Group cohesiveness** is defined as interpersonal attraction among group members and the extent to which the members "stick together".

**Intragroup relationship conflict** is defined as the awareness of interpersonal incompatibilities among group members. This includes affective components such as feeling tension and friction.

- **5** = Completely or almost entirely
- **4** = To a great extent
- **3** = To a moderate or some extent
- **2** = To a slight or very small extent
- **1** = Not at all or almost not at all

<table>
<thead>
<tr>
<th>Item</th>
<th>This item measures “group cohesiveness”</th>
<th>This item measures “intragroup relationship conflict”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. We are tolerant of each other.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. We accept each other’s unique or idiosyncratic characteristics.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. We allow each other to hold our own unique opinions and perspectives.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. We both try to accept the other party’s point of view.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. We are considerate of the other party’s difficulties.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. We give in on arguments rather than risk making the other party mad.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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<tr>
<td>7. We let each other show our own individuality.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. We are considerate of each other’s situation.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. We stand up for each other.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10. We try to benefit rather than harm each other.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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<tr>
<td>11. We prioritize the other party’s goals.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12. We make sure that one party’s work behavior does not hurt the other party’s well-being.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>13. We take into account the other party’s welfare when making decisions that may affect the other party.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>14. I would describe the relationship between us as harmonious.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
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</table>
Please answer each of the following questions. Your answers will be kept strictly confidential.

1. How old were you on your last birthday? _______ Years old

2. What is your gender? (1) Female (2) Male

3. How would you classify yourself below? (Check one)
   (1) Black Non-Hispanic
   (2) American Indian or Alaskan Native
   (3) White Non-Hispanic
   (4) Asian or Pacific Islander
   (5) Hispanic
   (6) Other: ____________________________

4. Where do you work or study?
   (1) North America
   (2) Europe
   (3) Asia
   (4) Australia or New Zealand
   (5) Other: ____________________________

5. What is your current position?
   (1) Tenured or tenure-track faculty
   (2) Doctoral student or candidate
APPENDIX C

Survey for Study 2: Item Reduction for the Measures of Relational Harmony

Team Assessment Survey

Dear Sir/Madam:

Thank you for agreeing to participate in this survey. The purpose of this survey is to gain knowledge about team management in contemporary organizations and the results will only be used in my own research. Please note that you should only continue to participate if you are currently working in a team of more than three non-leader team members (including your coworkers and yourself). If you do not work in such a team, please stop now. I greatly appreciate your consideration of participating.

I intend to collect data from a broad cross section of working employees and use these data for scientific analysis purposes only. Completing these questions will take you about 5 minutes. Participation is voluntary. Your individual responses will be kept strictly confidential. Information gathered from this research will be presented as aggregated and anonymous data and no one (except me) will see anyone’s individual responses.

Please answer all of the following questions to the best of your knowledge. I know that your time is very valuable and wish to thank you in advance for your help on this important project.

Sincerely,

Yonghong Liu
Ph.D. Candidate
Management Department
School of Business
University of Miami
Email: yliu@bus.miami.edu
**PART 1**

Think about the **work team** to which you currently belong. The items below ask about **your thoughts about your team and team members**. When thinking of your team members, please exclude the formal team leader. Respond to the following questions, as honestly as possible, using the response scales provided.

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<tr>
<td></td>
<td>Never</td>
<td>None</td>
<td>Rarely or Little</td>
<td>Sometimes or Some</td>
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<p>| | | | | |</p>
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<tbody>
<tr>
<td>1</td>
<td>How much conflict of ideas is there in your work team?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>How frequently do you have disagreements within your work team about the task of the project you are working on?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>How often do people in your work team have conflicting opinions about the project you are working on?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>How much relationship tension is there in your work team?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>How often do people get angry while working in your team?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>How much emotional conflict is there in your work team?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>How often are there disagreements about who should do what in your work team?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>How much conflict is there in your team about task responsibilities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>How often do you disagree about resource allocation in your work team?</td>
<td>1</td>
<td>2</td>
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Respond to the following questions, as honestly as possible, using the response scales on the right.

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<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td></td>
<td></td>
<td>Strongly Agree</td>
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</table>

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</thead>
<tbody>
<tr>
<td>10</td>
<td>There is a great deal of trust among members of my work team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Members of my group work together as a team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>The members of my work team regard each other as friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>
Think of a coworker in your team with whom you have the most frequent interactions, and use your relationship as the referent to answer the following questions. Please be as honestly as possible, using the response scales provided.

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</thead>
<tbody>
<tr>
<td>1</td>
<td>We are tolerant of each other</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>We accept each other's unique or idiosyncratic characteristics</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>We allow each other to hold our own unique opinions and perspectives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>We both try to accept the other person's point of view</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>We let each other show our own individuality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>We stand up for each other</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>We try to benefit rather than harm each other</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>We prioritize the other person's goals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>We make sure that one person's work behavior does not hurt the other person's well-being</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>We take into account the other party's welfare when making decsions that may affect the other party</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>I would describe the relationship between us as harmonious</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>I think I usually know where I stand with this coworker...I usually know how satisfied this coworker is with what I do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>I think that this coworker understands my problems and needs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>Regardless of how much formal authority this coworker has built into his or her position, he or she would be personally inclined to use power to help me solve problems in my work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>Regardless of the amount of formal authority this coworker has, I can count on him or her to 'bail me out' at his or her expense when I really need it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td>I have enough confidence in this coworker that I would defend and justify his or her decisions if he or she were not present to do so</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17</td>
<td>My working relationship with this coworker is good</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Please answer each of the following:

1. How old were you on your last birthday? ________ Years old

2. What is your gender? ________ (1) Male        ________ (2) Female

3. What is the highest level of education you have completed?
   ________ (1) Less than high school        ________ (2) High school diploma
   ________ (3) Two- three year college or technical school ________ (4) Bachelor's degree
   ________ (5) Masters' degree            ________ (6) Doctorate

THANKS A LOT FOR YOUR TIME!
APPENDIX D

Scales Used for Study 3: Confirmatory Factor Analysis

**Team Relational Harmony**
1. Overall, members in our team accept each other’s unique or idiosyncratic characteristics
2. Overall, our team members stand up for each other
3. I would describe the relationships among our team members as harmonious

**Intra-team Conflict**

**Task conflict**
1. There is conflict of ideas in my work team
2. We frequently have disagreements within my work team about the task of the project we are working on
3. People in my work team have conflicting opinions about the project we are working on

**Relationship conflict**
1. There is relationship tension in my work team
2. People often get angry while working in my team
3. There is emotional conflict in my work team

**Process conflict**
1. There are often disagreements about who should do what in my work team
2. There is conflict in my team about task responsibilities
3. We often disagree about resource allocation in my work team

*Note.* The above questions were built into a company-wide survey conducted by the HR department. Respondents were asked to rate the extent to which they agree or disagree with these statements on a 5-point Likert-type response scale, ranging from 1 = strongly disagree to 5 = strongly agree.
APPENDIX E

Survey for Study 4: Hypotheses Testing

Time 1: Team Member Survey

Dear Sir/Madam:

You are nominated by your company and are thus invited to participate in a research project of "Team composition, leadership, and harmonious team relationships." Effective teamwork is of vital importance to your daily work. The purpose of this research is to gain knowledge about how to set up and manage a team effectively and how to make team members work in harmony so as to improve team performance.

This research asks that you, as a team member, fill out two short surveys. Completing the first survey (the current one) will take you about 5 minutes. In three weeks, you will be asked to fill out a short follow-up survey, which will take you only 2 minutes.

I intend to collect data from a broad cross section of work teams and use these data for scientific analysis purposes only. Participation is voluntary. Your individual responses will be kept strictly confidential. Information gathered from this research will be presented as aggregated and anonymous data and neither your company nor your coworkers will see your responses.

To further ensure the anonymity of your participation but still allow me to identify the two surveys from you, the following procedure is followed. You have been pre-assigned a 5-digit code by your HR department. In the attached name list, you will find a list of your team members (including yourself) with your last name and name initials, as well as the corresponding 5-digit codes. Please put your code on the next page of the survey. Please peel this cover page off when turning in the complete survey in a sealed envelope.

Please answer all of the following questions to the best of your knowledge. I know that your time is very valuable and wish to thank you in advance for your help on this important project.

Sincerely,

Yonghong Liu
Ph.D. Candidate
Management Department
School of Business
University of Miami
Email: ylu@bus.miami.edu

By completing the survey, I acknowledge that I have read the above information and agree to participate in this research, with the knowledge that I am free to withdraw my participation without penalty.

Signature __________________________________ Date __________________________
Please put your pre-assigned 5-digit code here: ____________

Each statement below can be used to describe your relationship with your team leader. Please indicate your level of agreement on a 1-5 scale. A response of 1 indicates Strong Disagreement and a response of 5 indicates Strong Agreement.

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<tbody>
<tr>
<td>1</td>
<td>My team leader and I have a two-way exchange relationship.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>I do not have to specify the exact conditions to know my team leader will return a favor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>If I do something for my team leader, he or she will eventually repay me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>I have a balance of inputs and outputs with my team leader.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>My efforts are reciprocated by my team leader.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>My relationship with my team leader is composed of comparable exchanges of giving and taking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>When I give effort at work, my team leader will return it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>Voluntary actions on my part will be returned in some way by my team leader.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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Each statement below can be used to describe your team leader. Please indicate your level of agreement on the same scale.

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<tbody>
<tr>
<td>9</td>
<td>Our team leader encourages us who work for him/her to work as a team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Our team leader encourages us who work for him/her to exchange opinions and ideas.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>Our team leader often holds team meetings where s/he and our team members can really discuss things together.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Please answer each of the following:

1. How old were you on your last birthday? _____ Years old

2. What is your gender? _____ (1) Female _____ (2) Male

3. How long have you worked for your current organization? _____ Years _____ Months

4. Do you engage in managerial activities (do you have direct reports)? _____ (1) Yes _____ (2) No

5. What is the highest level of education you have completed? 
   (1) Middle school or below _____ (2) High school 
   (3) Two- three year college or an equivalent level of education 
   (4) Bachelor’s degree _____ (5) Masters’ degree or above

THANKS A LOT FOR YOUR TIME! PLEASE ENJOY THE BEVERAGE AND FOOD!
Time 2: Team Member Survey

Dear Sir/Madam:

Thank you for participating in the first survey of my research project of “Team composition, leadership, and harmonious team relationships” three weeks ago. The purpose of this research is to gain knowledge about how to set up and manage a team effectively and how to make team members work in harmony so as to improve team performance. Data collected last time have been entered into an electronic data file and the hard copies of the questionnaires have been shredded. Again, anonymity has been fully ensured.

You are now asked to complete the second survey, which will take you only 2 minutes. Please note that only complete information collected from both times is usable. Therefore, I strongly encourage you to fill this survey out to complete your responses. Your individual responses will be kept strictly confidential. Information gathered from this research will be presented as aggregated and anonymous data and neither your company nor your coworkers will see your responses.

As you know, to further ensure the anonymity of your participation but still allow me to identify the two surveys from you, you have been asked to use a pre-assigned a 5-digit code in the survey. In the attached name list, you will find the same list (as the one used last time) of your team members (including yourself) with your last name and name initials, as well as the corresponding 5-digit codes. Please put your code again on the next page of the survey. Please peel this cover page off when turning in the complete survey in a sealed envelope.

Please answer all of the following questions to the best of your knowledge. I know that your time is very valuable and wish to thank you in advance for your help on this important project.

Sincerely,

Yonghong Liu
Ph.D. Candidate
Management Department
School of Business
University of Miami
Email: yilu@bus.miami.edu

By completing the survey, I acknowledge that I have read the above information and agree to participate in this research, with the knowledge that I am free to withdraw my participation without penalty.

Signature__________________ Date__________________
Please put your pre-assigned 5-digit code here: __________

Think about the work team to which you currently belong. The items below ask about your thoughts about your team and team members. When thinking of your team members, please exclude the formal team leader. Respond to the following three questions, as honestly as possible, using the response scales provided.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Overall, members in our team accept each other's unique or idiosyncratic characteristics.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Overall, our team members stand up for each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>I would describe the relationships among our team members as harmonious.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Please answer the following two questions. These questions are asked again for the identification purpose (and to make sure that this survey is conducted by you).

1. What is your gender?   ___(1) Female   ___(2) Male
2. What is the highest level of education you have completed?
   ___(1) Middle school or below   ___(2) High school
   ___(3) Two- three year college or an equivalent level of education
   ___(4) Bachelor's degree   ___(5) Master's degree or above

THANKS A LOT FOR YOUR TIME! PLEASE ENJOY THE BEVERAGE AND FOOD!
Time 3: Team Leader Survey

Dear Sir/Madam:

Your team has been nominated by your company to participate in a research project of "Team composition, leadership, and harmonious team relationships." Team members have completed two surveys in the past five weeks. You, as the team leader, are now invited to fill out the last survey, assessing the team performance. The purpose of this research is to gain knowledge about how to set up and manage a team effectively and how to make team members work in harmony so as to improve team performance.

I am collecting data from a broad cross section of work teams and use these data for scientific analysis purposes only. Participation is voluntary. Completing this survey will take you about 5 minutes. Your individual responses will be kept strictly confidential. Information gathered from this research will be presented as aggregated and anonymous data and neither your company nor your colleagues will see your responses.

To further ensure the anonymity of your participation but still allow me to match your survey with your team members', the following procedure is followed. Your team has been pre-assigned a 3-digit code by your HR department. In the attached name list, you will find a list of your subordinates (not including yourself) with their last name and name initials, as well as the corresponding 5-digit codes for these members. The first 3-digit should be used as the team code. Please first check the name list and make sure that this is your team. Then please put the 3-digit code on the next page of the survey. Please peel this cover page off when turning in the complete survey in a sealed envelope.

Please answer all of the following questions to the best of your knowledge. I know that your time is very valuable and wish to thank you in advance for your help on this important project.

Sincerely,

Yonghong Liu
Ph. D. Candidate
Management Department
School of Business
University of Miami
Email: yliu@bus.miami.edu

By completing the survey, I acknowledge that I have read the above information and agree to participate in this research, with the knowledge that I am free to withdraw my participation without penalty.

Signature ___________________________ Date ________________
Please put the pre-assigned 3-digit team code here: ___________.

According to the names on the attached list, is this your team?

☐ 1. Yes.
☐ 2. No, this is not my team. You sent me a wrong name list.

Please choose one from the following three options that define the way your team tasks are performed.

☐ 1. There isn't much autonomy in the way the team tasks are performed.
☐ 2. The way team tasks are performed is fairly autonomous (e.g., the team has some autonomy to make discretionary arrangements at work).
☐ 3. The way team tasks are performed is very autonomous (e.g., the team has a great deal of autonomy to make many discretionary arrangements at work).

Please assess your team's overall performance (not any individual's performance) with the following three questions. These ratings are not related to your performance appraisal at all. Please be as honestly as possible, using the response scales provided.

<table>
<thead>
<tr>
<th>Question</th>
<th>Very poor</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The amount of work the team produces</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. The quality of work the team produces</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. My overall evaluation of the team's effectiveness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please answer each of the following:

1. How old were you on your last birthday? _______ Years old
2. What is your gender? ___(1) Female ___(2) Male
3. How long have you worked for your current organization? _______ Years _____ Months
4. How long have you been the team leader for this team? _______ Years _____ Months
5. What is the highest level of education you have completed? ___(1) Middle school or below ___(2) High school ___(3) Two- three year college or an equivalent level of education ___(4) Bachelor's degree ___(5) Masters' degree or above

THANKS A LOT FOR YOUR TIME! PLEASE ENJOY THE BEVERAGE AND FOOD!
APPENDIX F

List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDT</td>
<td>Social dominance theory</td>
</tr>
<tr>
<td>LMX</td>
<td>Leader-member exchange</td>
</tr>
<tr>
<td>TMX</td>
<td>Team-member exchange</td>
</tr>
<tr>
<td>CWX</td>
<td>Coworker exchange</td>
</tr>
<tr>
<td>SIT</td>
<td>Social identity theory</td>
</tr>
<tr>
<td>LIF</td>
<td>Leader interaction facilitation</td>
</tr>
<tr>
<td>ANOVA</td>
<td>Analysis of variance</td>
</tr>
<tr>
<td>EFA</td>
<td>Exploratory factor analysis</td>
</tr>
<tr>
<td>CFA</td>
<td>Confirmatory factor analysis</td>
</tr>
<tr>
<td>CFI</td>
<td>Comparative fit index</td>
</tr>
<tr>
<td>TLI</td>
<td>Tucker-Lewis index</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Root mean square error of approximation</td>
</tr>
<tr>
<td>SRMR</td>
<td>Standardized root mean square residual</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence interval</td>
</tr>
</tbody>
</table>
## APPENDIX G

### Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Relational harmony</td>
<td>The theoretical definition: The coexistence of two or more entities in a state of mutual acceptance and benevolence.</td>
</tr>
<tr>
<td>(Developed in this research)</td>
<td>Mutual acceptance is the extent to which neither entity tries to dominate or change the other or the other’s situation (as a person).</td>
</tr>
<tr>
<td></td>
<td>Mutual benevolence is the extent to which both entities are disposed to or actually act beneficially toward each other.</td>
</tr>
<tr>
<td>Team relational harmony</td>
<td>Team relational harmony refers to the coexistence of team members in a state of mutual acceptance and benevolence.</td>
</tr>
<tr>
<td>(Developed in this research)</td>
<td>Specifically, it reflects the extent to which all team members mutually accept each other’s individuality and uniqueness (i.e., mutual acceptance), while serving the best interests of each member or those of the collective (i.e., mutual benevolence).</td>
</tr>
<tr>
<td>Team diversity</td>
<td>Heterogeneity among team members on observable or readily detectable attributes, such as gender, age, or race, or less visible or underlying attributes, such as education, tenure in the organization, or values.</td>
</tr>
<tr>
<td>Social exchange relationship</td>
<td>A more invested relationship that is based on—and motivated by—obligatory exchanges of unspecified favors and benefits, over an open-ended and long-term time frame.</td>
</tr>
<tr>
<td>(Blau, 1964)</td>
<td></td>
</tr>
<tr>
<td>Coworker exchange</td>
<td>A high-quality coworker exchange relationship exists when coworkers who report to the same supervisor share mutual respect, trust, and obligation.</td>
</tr>
<tr>
<td>(Sherony &amp; Green, 2002)</td>
<td></td>
</tr>
<tr>
<td>Group cohesiveness</td>
<td>Interpersonal attraction among members and the extent to which the members “stick together”.</td>
</tr>
<tr>
<td>(Festinger, 1950; Harrison et al., 1998)</td>
<td></td>
</tr>
<tr>
<td>Intragroup conflict (Jehn &amp; Mannix, 2001)</td>
<td>Task conflict is an awareness of differences in viewpoints and opinions pertaining to a group task. Relationship conflict is an awareness of interpersonal incompatibilities. This includes affective components such as feeling tension and friction. Process conflict is an awareness of controversies about aspects of how task accomplishment will proceed. More specifically, process conflict pertains to issues of duty and resource delegation, such as who should do what and how much responsibility different people should have.</td>
</tr>
<tr>
<td>Task interdependence (Van der Vegt, Van de Vliert, &amp; Oosterhof, 2003)</td>
<td>The extent to which an individual team member needs information, materials, and support from other team members to be able to carry out his or her job.</td>
</tr>
<tr>
<td>Group faultlines (Lau &amp; Murnighan, 1998)</td>
<td>Faultlines are hypothetical dividing lines that exist on diversity attributes and split a group or a team into two or more subgroups.</td>
</tr>
<tr>
<td>Strength of faultlines (Lau &amp; Murnighan, 1998)</td>
<td>The extent to which multiple attributes align themselves and produce the same split or subgrouping of a team.</td>
</tr>
<tr>
<td>Subgroups (Carton &amp; Cummings, 2012)</td>
<td>A subset of members of the same work team, whereby a work team is a group whose membership and task are formally recognized by the organization.</td>
</tr>
<tr>
<td>Identity-based subgroups (Carton &amp; Cummings, 2012)</td>
<td>Subgroups based upon members sharing common identities.</td>
</tr>
<tr>
<td>Resource-based subgroups (Carton &amp; Cummings, 2012)</td>
<td>Subgroups based upon differences in abilities to claim resources.</td>
</tr>
<tr>
<td>Knowledge-based subgroups (Carton &amp; Cummings, 2012)</td>
<td>Subgroups based upon knowledge background.</td>
</tr>
<tr>
<td>Balanced subgroups (Carton &amp; Cummings, 2012)</td>
<td>Team subgroups are equal in size.</td>
</tr>
<tr>
<td>Status (as a social resource; Foa, 1971; Bining &amp; Huo, 2012)</td>
<td>An expression of evaluative judgment which conveys high or low prestige, regard, or esteem. Example of a symbolic form of status: Acknowledgement of standing. Examples of concrete forms of status: Ranking, title, relative position in organization.</td>
</tr>
<tr>
<td>Leader interaction facilitation behavior (Bowers &amp; Seashore, 1966)</td>
<td>Leader behavior that encourages members of the group to develop close and mutually satisfying relationships.</td>
</tr>
<tr>
<td>Leader-member exchange (Danseraeu, Graen, &amp; Haga, 1975)</td>
<td>Leaders develop unique types of relationships with individual subordinates. These relationships fall along a continuum ranging from low-quality, in which the relationship is based strictly on the transactional part of the employment contract, to high-quality relationships, based on mutual liking, trust, respect, and influence.</td>
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<tr>
<td>Substitute effect (Kerr &amp; Jermier, 1978; Schriesheim, 1997)</td>
<td>Substitutes for leadership are variables that make leadership impossible and unnecessary. Substitutes are directly related to subordinate outcome criteria and they block or cancel leadership-outcome relationships. In the current research, using the ideas originated by Kerr and Jermier, (1978), leader interaction facilitation behavior is hypothesized as a substitute for balance of subgroups in influencing team relational harmony.</td>
</tr>
</tbody>
</table>