

# A MODEL OF EMOTIONAL INTELLIGENCE AND CONFLICT MANAGEMENT STRATEGIES: A STUDY IN SEVEN COUNTRIES

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*The study investigated the relationships of the five dimensions of emotional intelligence: self-awareness, self-regulation, motivation, empathy, and social skills of supervisors to subordinates' strategies of handling conflict: problem solving and bargaining. Data (N = 1,395) for this study were collected with questionnaires from MBA students in seven countries (U.S., Greece, China, Bangladesh, Hong Kong and Macau, South Africa, and Portugal). Psychometric properties of the measures were tested and improved with exploratory and confirmatory factor analysis and analysis of indicator and internal consistency reliabilities, and the hypotheses were tested with a structural equations model for each country. Results in the U.S. and in the combined sample provided support for the model which suggests that self-awareness is positively associated with self-regulation, empathy, and social skills; self regulation is positively associated with empathy and social skills; empathy and social skills are positively associated with motivation; which in turn, is positively associated with problem solving strategy and negatively associated with bargaining strategy. Differences among countries in these relationships are noted and implications for organizations*

*discussed.*

Literature generally acknowledges the inadequacy of intelligence as a predictor of leadership effectiveness. Sternberg (2002) suggests that "the predictive value of intelligence may have been flagged in various studies because these studies examined and measured aspects of intelligence that, however effective they may be in predicting academic and certain other kinds of performance, are not effective predictors of leadership performance" (p. 9). Traditional conceptualization of intelligence is generally concerned with the analytical or academic aspect of intelligence, but an adequate conceptualization of this construct comprises other aspects as well.

Studies on intelligence over many years focused mainly on the adaptive use of cognition, but in recent years theorists such as Gardner (1983, 1999) and Sternberg (1985, 2002) have suggested more encompassing approaches to conceptualizing intelligence. Sternberg suggests that there are other dimensions of intelligence—social intelligence, emotional intelligence, or practical intelligence or what scholars refer to as "street smarts"—which indicates that an individual is not limited simply because he or she has a below average academic intelligence or IQ. Although Gardner did not use the term emotional intelligence (EQ), his concepts of intrapersonal and interpersonal intelligences provided the basis for the conceptualization of EQ. Whereas intrapersonal intelligence is the ability to understand one's own emotions, interpersonal intelligence is one's ability to understand the emotions of others.

In his role as a consultant in organizations, Goleman (1998; see also Goleman, 1995; Goleman, Boyatzis, & McKee, 2002) found that emotional intelligence or EQ is twice as important than technical skills and IQ for jobs at all levels. He also reported that emotional intelligence plays an increasingly important role at the highest levels of a company. When he compared "Star performers with average ones in senior leadership positions, nearly 90% of the difference in their profiles was attributable to emotional intelligence factors rather than cognitive abilities" (p. 103). We acknowledge that some social scientists may not consider this claim as scientific evidence.

Interest among social scientists on emotions as a domain of intelligence has grown in recent years. Emotional intelligence refers to one's ability to be aware of one's own feelings, be aware of others' feelings, to differentiate among them, and to use the information to guide one's thinking and behavior (Salovey & Mayer, 1990). This definition consists of three

categories of abilities: evaluation and expression of emotion, regulation of emotion, and using emotions in decision making. A similar definition was recently provided by Goleman (1998): "the capacity for organizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" (p. 317). It appears that EQ relates to a number of non-cognitive skills, abilities, or competencies that influence an individual's capacity to deal with environmental demands and pressures. Although Goleman (1995) is the progenitor of the EQ construct, it was first discussed by Slavy and Mayer and had its roots in Thorndike's (1920) concept of social intelligence.

Several researchers have attempted to develop self-report measures of EQ (e.g. Bar-On, 1997; Boyatzis & Goleman, 2001; Bernet, 1996; Cooper & Sawaf, 1997; Mayer, Salovey, & Caruzo, 1997; Schutte et al., 1998), but psychometric properties of these instruments are questionable. There is hardly any evidence of the construct validity of these measures. Davis, Stankov, and Roberts (1998) concluded from their three studies that, "as presently postulated, little remains of emotional intelligence that is unique and psychometrically sound. Thus, questionnaire measures are too closely related to 'established' personality traits, whereas objective measures of emotional intelligence suffer from poor reliability" (p. 1013). This study indicates the potential dark side of popularizing a construct before it is carefully conceptualized and operationalized and rigorous empirical studies are completed. Let us explain:

1. Existing studies have exclusively used self-report measures of EQ and criterion variables that may have resulted in common method variance. This occurs when data are collected from the same respondents, with the same measures, and at the same time.

2. Face validity of the items in some of these instruments, e.g, "I maintain cooperative relationships," "I deal calmly with stress," "I am careful in my work" (Boyatzis & Goleman, 2001) are questionable. There is no evidence to indicate that these items measure emotional intelligence and they may be susceptible to social desirability responding.

3. In organizational studies, supervisors are often asked to assess their own managerial skills. Studies by Kruger and Dunning (1999) and Shipper and Dillard (2000) reported that unsuccessful supervisors overestimate their skills compared to those of successful supervisors. Also three studies reported that under-estimators of their managerial skills are likely to be more effective than over-estimators (Atwater & Yammarino, 1992; Church, 1997; Van Velsor, Taylor, & Leslie, 1993). As a result, if the supervisors are asked to self-assess their EQ, some of them will probably

provide misleading information.

The first objective of the present study was to develop a psychometrically sound instrument to measure EQ. An attempt was made to overcome some of the limitations of the existing self-report measures by asking observers (e.g., subordinates) to assess their supervisor's EQ. The instrument's convergent and discriminant validities were tested and improved with exploratory and confirmatory factor analysis and analysis of indicator and internal consistency reliabilities with data from seven countries including the U.S. The second objective was to test a process model by correlating the dimensions of EQ with each other and with the strategies of managing conflict with supervisor.

### **Exogenous Variables: Five Dimensions of EQ**

Goleman suggests that EQ at work is a multidimensional construct consisting of five components, such as self-awareness, self-regulation, motivation, empathy, and social skills. Unfortunately, Goleman uses the term EQ to include almost everything but IQ: emotional awareness, accurate self-assessment, self-confidence, trustworthiness, conscientiousness, adaptability, innovation, achievement drive, commitment, initiative, optimism, leveraging diversity, political awareness, influence, communication, conflict management, change catalyst, building bonds, collaboration and cooperation, and team capabilities. Bar-On (1997) and Bar-On and Parker's (2000) definition of EQ also falls into this category. This framework stretches the conceptualization of intelligence way beyond acceptable limits (Hedlund & Sternberg, 2000). As suggested by Salovey and Mayer (1994) and Mayer, Caruso, and Salovey (2000) there should be a more restrictive model of EQ based on ability and distinguished from personality. We do this for the present study by redefining the following Goleman dimensions of EQ:

1. **Self-Awareness** is associated with the ability to be aware of which emotions, moods, and impulses one is experiencing and why. This also includes one's awareness of the effects of his or her feelings on others.

2. **Self-Regulation** refers to the ability to keep one's own emotions and impulses in check, to remain calm in potentially volatile situations, and to maintain composure irrespective of one's emotions.

3. **Motivation** represents the ability to remain focused on goals despite setbacks, to operate from hope of success rather than fear of failure, delaying gratification, and to accept change to attain goals.

4. **Empathy** refers to one's ability to understand the feelings

transmitted through verbal and nonverbal messages, to provide emotional support to people when needed, and to understand the links between others' emotions and behavior.

5. **Social Skills** is associated with one's ability to deal with problems without demeaning those who work with him or her, to not allow own or others' negative feelings to inhibit collaboration, and to handle affective conflict with tact and diplomacy.

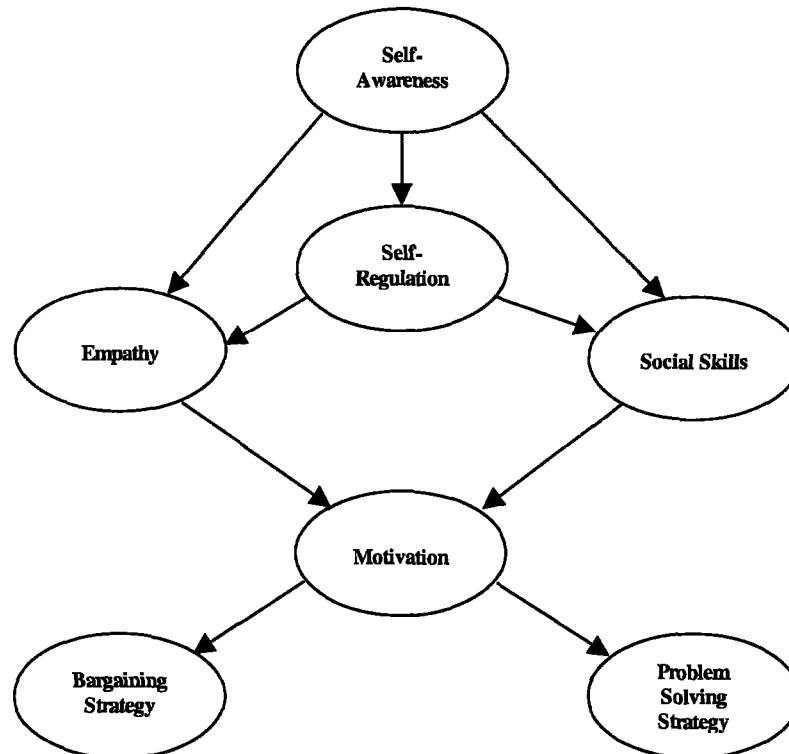
There are significant intercorrelations among the dimensions of EQ. These interrelationships should be explained so that practitioners can improve and use appropriate dimensions of EQ to increase their subordinates' conflict management strategies and performance. It is possible that a change in one of the dimensions of EQ may affect other dimensions of EQ. Knowing how the various dimensions of EQ influence each other is important as each dimension may influence outcomes, not only directly but also through the mediation of its effects on other dimensions of EQ.

Existing studies have used correlational analysis to test the relationships between the EQ and criterion variables that ignored the interrelationships among the various dimensions of EQ or the process with which they influence various individual, group, and organizational outcomes. To overcome this limitation, we developed and tested a process model presented in Figure 1

In order to understand the emotional processes and deal with them effectively, one needs to have self-awareness and self-regulation. Empathy and social skills involve one's ability to perceive others' emotions, feelings, and needs and help others to regulate their emotions to achieve desirable goals. Motivation is needed to help an individual to remain focused for attaining goals (Druskat & Wolf, 2001).

Several studies reported that self-awareness is an essential ability for enhancing managerial effectiveness (e.g., Church, 1997; Shipper & Dillard, 2000). Self-awareness is also a prerequisite for self-regulation, empathy, and social skills (Lane, 2000). Goleman (2001, p. 32) indicates that in workplace self-awareness positively influences self-regulation, empathy, and social skills; and self-regulation, in turn, influences empathy and social skills.

**Figure 1**  
**Model of Emotional Intelligence and Conflict Management Strategies**



Motivation is necessary for attaining goals and we are hypothesizing that social competence, such as empathy and social skills, help an individual to remain focused and attain goals (Goleman, 1998). On the basis of this review we state the following seven hypotheses:

*Hypothesis 1:* Self-awareness is positively associated with self-regulation.

*Hypothesis 2:* Self-awareness is positively associated with empathy.

*Hypothesis 3:* Self-awareness is positively associated with social skills.

*Hypothesis 4:* Self-regulation is positively associated with empathy.

*Hypothesis 5:* Self-regulation is positively associated with social skills.

*Hypothesis 6:* Empathy is positively associated with motivation. *Hypothesis 7:* Social skills is positively associated with motivation.

These hypotheses are in the positive direction and, in general, we would expect these relationships among the five dimensions of EQ. But in some cases, negative relations among these dimensions are possible. For example, self-awareness may decrease motivation in situations where one realizes that goal attainment is difficult or impossible.

In the process of attaining goals, there may be supervisor-subordinate conflict which must be handled functionally for positive outcomes. Existing literature suggests that some of the attitudes and behaviors of the supervisors influence employee outcomes, such as compliance and satisfaction (Rahim, Kim, & Kim, 1994), the styles of handling conflict with supervisor and job performance (Rahim, Antonioni, & Psenicka, 2002). As discussed later, the two outcomes in the present study are enhancing employees' problem solving strategy and minimizing their bargaining strategy of handling conflict with supervisor.

## **Endogenous**

### **Variables Styles of Handling Interpersonal**

#### **Conflict**

Based on the conceptualizations of Follett (1940), Blake and Mouton (1964), and Thomas (1976). Rahim and Bonoma (1979) differentiated the styles of handling interpersonal conflict on two basic dimensions, concern for self and for others. The first dimension explains the degree (high or low) to which a person attempts to satisfy his or her own concern. The second dimension explains the degree (high or low) to which a person attempts to satisfy the concern of others. Combining the two dimensions results in five specific styles of handling conflict. Descriptions of these styles are:

1. **Integrating** (high concern for self and others) style involves openness, exchange of information, and examination of differences to reach an effective solution acceptable to both parties. It is associated with problem solving, which may lead to creative solutions

2. **Obliging** (low concern for self and high concern for others) style is

associated with attempting to play down the differences and emphasizing commonalities to satisfy the concern of the other party.

3. **Dominating** (high concern for self and low concern for others) style has been identified with win-lose orientation or with forcing behavior to win one's position.

4. **Avoiding** (low concern for self and others) style has been associated with withdrawal, buck-passing, or sidestepping situations.

5. **Compromising** (intermediate in concern for self and others) style involves give-and-take whereby both parties give up something to make a mutually acceptable decision.

**Integrative and Distributive Dimensions.** It has been suggested by Prein (1976) and Thomas (1976) that further insights into the five styles of handling interpersonal conflict may be obtained by organizing them according to the integrative and distributive dimensions of labor-management bargaining suggested by Walton and McKersie (1965). Figure 2 shows the five styles of handling interpersonal conflict and their reclassifications into the problem solving and bargaining dimensions.

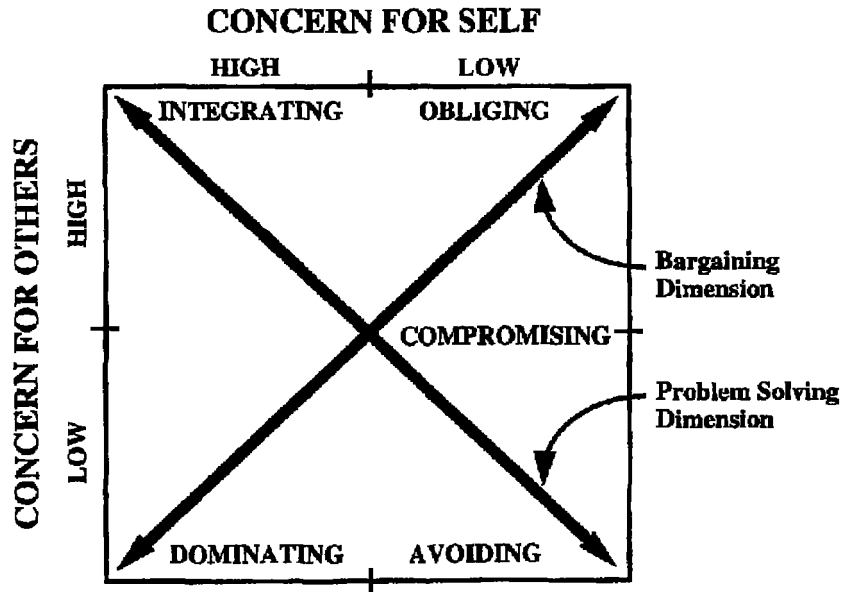
The integrative dimension—Integrating style *minus* Avoiding styles—represents a party's concern (high-low) for self and others. The distributive dimension—Dominating style *minus* Obliging style—represents a party's concern (high-low) for self or others. These two dimensions represent the *problem solving* and *bargaining* strategies for handling conflict, respectively (Rahim, Antonioni, & Psemcka, 2001). A problem solving strategy represents a party's pursuit of own *and* others' concerns, whereas the bargaining strategy represents a party's pursuit of own *or* others' concerns.

A High-High use of the problem solving strategy indicates attempts to increase the satisfaction of concerns of both parties by finding unique solutions to the problems acceptable to them. A Low-Low use of this strategy indicates reduction of satisfaction of the concerns of both parties as a result of their failure to confront and solve their problems. A High-Low use of the bargaining strategy indicates attempts to obtain high satisfaction of concerns of self and providing low satisfaction of concerns to others. A Low-High use of this strategy indicates attempts to obtain the opposite. A positive score in the problem solving scale indicates joint gains, but negative scores indicate losses for both parties. A positive score in the bargaining scale indicates one's gain, but loss to the other party. A negative score indicates one's loss, but gain to the other party. Compromising is the point of intersection of the two dimensions, that is, a middle ground



position where a party has an intermediate level of concerns for own and others.

**Figure 2**  
**The Dual-Concern Model: Problem Solving and Bargaining**  
**Strategies for Managing Interpersonal Conflict**



Literature on organizational conflict shows that integrating style is positively associated with individual and organizational outcomes. Burke (1970) suggested that, in general, a confrontation (integrating) style was related to the effective management of conflict, while forcing (dominating) and withdrawing (avoiding) were related to the ineffective management of conflict. Lawrence and Lorsch (1967) indicated that a confrontation style dealing with intergroup conflict was used to a significantly greater degree in higher than lower performing organizations. Goleman (1998) suggests that emotionally intelligent employees are better able to negotiate and effectively handle their conflicts with organizational members. A recent study shows that a supervisor's referent power base was positively associ-

ated with subordinates' problem solving strategy, which in turn, was positively associated with their job performance. Referent power base was negatively associated with bargaining strategy, which in turn, was negatively but non-significantly associated with job performance (Rahim, Antonioni, & Psenicka, 2001). Following this study, we are hypothesizing that a supervisor's motivation to enhance performance and goal attainment will encourage subordinates to use more problem solving strategy and less bargaining strategy in managing conflict.

*Hypothesis 8:* Motivation is positively associated with a problem solving strategy.

*Hypothesis 9:* Motivation is negatively associated with a bargaining strategy-

The nine hypotheses for the present study were formulated on the basis of theoretical work and empirical studies in the United States. Following Spector et al.'s (2002) study, which concluded that some of the Western findings are generalizable in countries with wide range of cultural differences, we expected overall support for our model (presented in Figure 1) in the United States and other countries

## **Method**

### **Sample and Procedure**

Data for this study were collected from 1,395 employed MBA students in the U.S ( $n = 408$ ), Greece ( $n = 240$ ), China ( $n = 227$ ), Hong Kong and Macao ( $n = 138$ ), Bangladesh ( $n = 204$ ), Portugal ( $n = 90$ ), and South Africa ( $n = 88$ ). The authors in the present paper collected data from their respective countries. The data were collected from MBA students in order to make the samples from different countries comparable with each other. Although Hong Kong and Macao are now parts of China, we decided to keep these territories separate from mainland China for data analysis. As discussed later, the results for China were different from those of Hong Kong and Macao.

Average chronological age of the respondents in the seven countries ranged between 23.68-36.73 ( $SD = 3.09-9.22$ ). Their average full-time work experience in years ranged between 4.55-13.42 ( $SD = 3.08-8.92$ ). The percentage of male respondents in the seven countries ranged between 43.3%-82.4%. Average full-time work experience (in years) of the respondents with their present supervisors ranged between 1.54-7.48 ( $SD = 1.59-3.75$ ).

## Measurement

**Emotional Intelligence.** The five dimensions of supervisory EQ were measured with the EQ Index (EQI). This 40-item instrument was designed by the first author to measure subordinates' perceptions of their respective supervisors' EQ. The EQI was designed on the basis of repeated feedback from respondents and faculty and an iterative process of exploratory and confirmatory factor analyses of various sets of items. Considerable attention was devoted to the study of published instruments on EQ. Initially an instrument was designed and filled out by MBA and undergraduate students ( $N = 90$ ). After the students completed the questionnaire, the instructor initiated an item-by-item discussion. Critiques of the instrument were also received from four management professors. The items that were reported to be difficult, ambiguous, or inconsistent were either dropped or revised. A new item was added to compensate for the elimination of an item. Special attempts were made to make the items free from social desirability contamination. Four successive exploratory factor analyses were performed to select items for the EQI ( $N$ s: organizational members = 65; employed management students = 365; Chamber of Commerce members = 220, MBA and employed management students = 423). After each factor analysis, the items that loaded less than .50 and/or loaded on an uninterpretable factor were dropped or rephrased. About 112 items were considered for inclusion in the instrument.

As a result of the above analysis, a 40-item instrument was developed to measure the five Goleman components of EQ. The instrument uses a 7-point Likert scale (7 = Strongly Agree . . . 1 = Strongly Disagree) for ranking each item and a higher score indicates a greater dimension of EQ of a supervisor.

**Styles of Handling Interpersonal Conflict** The four styles of handling interpersonal conflict with a supervisor—integrating, obliging, dominating, and avoiding—were measured with 24 of the 28 items of the Rahim Organizational Conflict Inventory-II (ROCI-II), Form A (Rahim, 1983, 2001). The items of the ROCI-II used a 7-point Likert scale to measure the conflict-handling behavior of subordinates. A higher score indicates greater use of a style of handling interpersonal conflict with a supervisor. Scores from the ROCI-II were utilized to construct the two dimensions as follows:

Problem solving strategy = Integrating style – Avoiding style

Bargaining strategy = Dominating style - Obliging style

Since the ROCI-II measures the styles with a 7-point scale, the subscales for problem solving and bargaining strategies ranged between + 6 and - 6, with a 0 in the middle of the scale. In the problem solving subscale, whereas a score of + 6 represents a party's attempts to provide high satisfaction of concerns for both parties a - 6 score represents a party's attempts to provide little or no satisfaction of concerns received by both parties as a result of the resolution of their conflict. A value of + 6 in the bargaining subscale indicates a party's perception of high satisfaction of concerns received by self and little or no satisfaction of concerns received by the other party. A value of - 6 indicates little or no satisfaction of concerns received by self and high satisfaction of concerns received by the other party.

Rahim and Magner's (1995) confirmatory factor analyses in five different samples ( $N = 2,076$ ) provided support for the convergent and discriminant validities of the ROCI-II and the invariance of the five-factor model across referent roles (i.e., superior, subordinates, and peers), organizational levels, and four of the five samples. A number of studies have supported the criterion validity of the instrument (see Rahim, 2001, for a review of these studies). The subscales were not associated with social desirability response bias.

**Time 1-2.** The data on the EQI were collected at Time 1, but the data on the ROCI-II were collected at Time 2 (which was one week from Time 1). At the time the MBA students filled out the EQI, they were not told that they would be required to fill out another questionnaire in a week. This was done to overcome the problem of common method variance (Podsakoff & Organ, 1986).

## **Analysis and Results**

The first part of the analysis was designed mainly to test and improve the psychometric properties of the EQ Index (EQI). The second part of the analysis was designed to test the nine hypotheses of the present study.

### **Univariate Normality**

An Analysis sample of 60% of the cases ( $i = 837$ ) were randomly selected for use in the initial analysis with the remainder reserved as a Holdout sample ( $n = 558$ ). Initially data screening was performed using PRELIS 2 (Joreskog & Sorbom, 1996b). Both the analysis and holdout samples exhibited a high degree of univariate normality with skewness and kurtosis statistics well within the acceptable levels of 1 and 7 for all but one

item (Curran, West, & Finch, 1996). For the analysis sample the maximum absolute values of skewness and kurtosis were .91 and .81, respectively. The numbers for the holdout sample were 1.05 and .98, respectively. A visual check of the distributions revealed only unimodal distributions for both the samples.

### **Exploratory Factor Analysis (EFA)**

An EFA was computed on the analysis sample with the 40 items of the EQI. The analysis was computed with the principal-component analysis and the terminal solution was reached with the varimax rotation. The analysis resulted in five significant factors that explained about 68% of the variance in the data. The selection of a item was based upon these criteria: factor loading > .50, eigenvalue > 1.00, and the screen test. Based on these criteria, 35 items that loaded on the five *a priori* factors were selected. This provided evidence of content validity to the resulting factor structure.

### **Confirmatory Factor Analysis (CFA)**

Using the same set of data, a CFA was computed with LISREL 8 (Joreskog & Sorbom, 1996a) on the 35 items selected through EFA to provide further construct validity and to refine the factor structure. After a "best fit" structure was defined in the analysis sample, it was tested against the holdout sample. The analysis sample was used to conduct a CFA on the factor structure with the goal of adjusting the model for best fit. Each item passing the exploratory analysis was allowed to load on its assigned factor. The LISREL output also includes both  $R^2$  and modification index for each item (Joreskog & Sorbom, 1996a). The  $R^2$  indicates the amount of item variance explained by the factor, and the modification index gives an approximate model change if items were linked to other factors. Ideally the  $R^2$  should be high and, since the modification index indicates ambiguity in the loadings, it should be low. Using these values as guides, the model was adjusted with a goal of improving the measures of fit. This resulted in a model with 22 items remaining in the analysis sample. Empathy, self-awareness, and social skills factors each retained 4 items. Motivation and self-regulation factors retained 5 each.

This model was then tested in the holdout sample. The factor loadings and their respective *t*-ratios and the resulting fit statistics for both the analysis and holdout samples are presented in Table 1. For a reasonably good fit, the RMSEA should be less than .08 while the remaining fit indexes should be .90 or better. Using these criteria, we judged the resulting model

satisfactory for continuing research.

The loadings in the resulting model were all significant with minimum  $t$ -values of 17.6 (analysis sample) and 16.6 (holdout). The factor correlations were all significant with minimum  $t$ -values of 17.8 (analysis sample) and 13.8 (holdout sample). The correlations are presented in Table 2.

**Indicator Reliability.** Each questionnaire item has a reported  $R^2$  that measures the item's variance explained by the factor. This measure of indicator reliability should be greater than .50 for each of the indicators (Fornell & Larcker, 1981). The  $R^2$  for the analysis sample ranged from .38 to .73 with one item below .50. For the holdout sample the range was .34 to .77 with two items below .50. The lowest  $R^2$  was for the same item in both analyses. Overall, the  $R^2$ s exhibit good indicator reliability.

**Internal Consistency Reliability.** The internal consistency reliability coefficients of the five subscales of the EQI, as assessed with Cronbach  $\alpha$ , ranged between .58 and .95. These coefficients are satisfactory (Nunnally, 1978). Table 3 presents the means and reliability coefficients of the five EQI subscales.

**Convergent and Discriminant Validities.** The average variance extracted by all the items loading on a given factor measures convergent validity and should exceed .50 (Fornell & Larcker, 1981; Carr, 2002). These values are presented in Table 4. The average  $R^2$  all exceeded the minimum .50 threshold for supporting convergent validity. In the test for discriminant validity the squared correlations between factors should be less than the average variance extracted for each factor (Fornell & Larcker, 1981; Carr, 2002). In the analysis sample there is lack of discriminant validity between self-regulation and social skills factors. This is also present in the holdout sample with additional questionable validities for empathy with both social skills and self-awareness.

**Country Comparisons.** The CFA was repeated for each of the seven countries to determine the stability of the 22 EQI items when applied to individual countries. This analysis is limited by the smaller sample sizes, but the results suggest support for the overall structure. Table 5 presents the model statistics for the individual countries.

Generally, it is expected that good models will have an RMSEA less than .08 and other fit indexes  $>$  .90. This is not the case in the current study. The individual country fit indexes are somewhat weak. This will influence the conclusions drawn from any causal analysis based on this instrument,

**Table 1**  
**(A) Confirmatory Factor Analysis of the 22 EQI Items in Split Samples**

Items	Analysis Sample		Holdout Sample	
	Loading	t	Loading	t
<i>Self-awareness</i>				
3. Is well aware of which emotions he or she is experiencing and why.	.61	25.10	.64	24.47
4. Is well aware of the effects of his or her feelings on others	.63	25.48	.68	27.67
5. Is well aware of his or her moods	.64	27.36	.65	26.16
8. Is well aware of his or her impulses.	.58	23.81	.61	24.65
<i>Self-regulation</i>				
1. Keeps his or her distressing emotions in check.	.71	23.38	.68	21.99
10. Remains calm in potentially volatile situations.	.73	28.65	.74	28.22
11. Keeps his or her disruptive impulses in check.	.68	27.49	.73	28.12
13. Maintains composure irrespective of his or her emotions.	.75	27.49	.76	27.45
20. Manages his or her stress well	.64	24.99	.66	26.33
<i>Motivation</i>				
2. Accepts rapid change to attain the goals of his or her group/organization.	.55	22.40	.57	22.89
12. Has high motivation to set and attain challenging goals.	.72	27.25	.71	25.31
17. Operates from hope of success rather than fear of failure.	.75	27.38	.74	26.73
18. Stays focused on goals despite setbacks.	.71	26.94	.72	29.61
19. Does not hesitate to make sacrifices to achieve important organizational goals	.62	21.99	.64	21.80
<i>Empathy</i>				
9. Understands the feelings transmitted through nonverbal messages.	.54	24.36	.57	26.64
14. Understands the links between employees' emotions and what they do.	.56	25.77	.58	26.92
21. Provides useful and timely feedback.	.52	21.54	.51	19.96
22. Understands the feelings transmitted through verbal messages	.53	24.86	.56	25.12
<i>Social Skills</i>				
6. Confronts problems without demeaning those who work with him or her.	.56	23.04	.55	22.86
7. Sets aside emotions in order to complete the task at hand	.51	17.61	.50	16.63
15. Does not allow his or her own negative feelings to inhibit collaboration.	.61	25.66	.62	25.70
16. Handles emotional conflicts with tact and diplomacy	.62	24.17	.64	24.96

(B) Confirmatory Model Fit Statistics

Index	Analysis Sample	Holdout Sample
Chi-Square ( $df = 199$ )	643.68	898.33
Root Mean Square Error of Approximation (RMSEA)	.06	.07
Normed Fit Index (NFI)	.94	.92
Non-Normed Fit Index (NNFI)	.95	.93
Goodness-of-Fit Index (GFI)	.93	.90
Adjusted Goodness-of-Fit Index (AGFI)	.91	.87

**Table 2**  
**Factor Correlations**

EQI subscales	1	2	3	4	5
1. Self-regulation	1.00	.69 (29.1)	.60 (21.8)	.74 (35.2)	.79 (40.4)
2. Self-awareness	.74 (35.2)	1.00	.70 (29.6)	.77 (37.4)	.59 (19.9)
3. Motivation	.66 (26.7)	.67 (26.9)	1.00	.58 (19.7)	.47 (13.8)
4. Empathy	.73 (32.5)	.73 (31.5)	.62 (22.6)	1.00	.81 (40.7)
5. Social Skills	.76 (36.5)	.60 (20.2)	.55 (17.7)	.75 (32.2)	1.00

*Note:* Factor correlations of the analysis and holdout samples are below and above the diagonal, respectively. *T*-values are in parentheses.

especially if the conclusions are intercultural in nature. The United States was compared to each of the other samples, one by one, to determine if there is a significant difference in the factor structure between countries. If there is a high degree of compatibility, it would suggest that the same model is applicable cross-culturally. This analysis assumes the factor structure, factor correlations, loadings, and errors are invariant between the countries. Table 6 presents the overall results. The RMSEA looks reasonably good for the Hong Kong, China, and S. Africa comparisons and marginal for the other countries. Once again, although the results are not excellent, there appears to be support for consistency of this model across countries.



**Table 3**  
**Means, Standard Deviations, and Cronbach  $\alpha$  Internal Consistency Reliabilities Across Countries**

Factors	U.S.		BD		HK		GR		PO		China		SA								
	M	SD	$\alpha$	M	SD	$\alpha$	M	SD	$\alpha$	M	SD	$\alpha$	M	SD	$\alpha$						
Integrating	5.1	.13	.95	6.1	.09	.80	5.4	.27	.86	5.7	.06	.90	5.8	.11	.88	5.6	.23	.83	5.5	.16	.87
Obliging	4.7	.44	.90	4.9	.77	.76	5.1	.50	.79	4.9	.32	.84	4.4	.93	.81	4.9	.61	.73	4.7	.46	.80
Dominating	4.0	.41	.81	4.3	.89	.77	4.3	.59	.64	4.7	.13	.86	4.2	.93	.71	4.7	.50	.74	4.4	.48	.79
Avoiding	3.9	.44	.84	5.5	.85	.70	4.3	.76	.76	4.9	.24	.88	5.1	.38	.82	5.2	.52	.68	3.9	.40	.86
Self-awareness	5.0	.14	.78	5.2	.19	.68	4.8	.14	.72	5.1	.13	.81	4.4	.22	.73	4.6	.69	.58	4.8	.23	.71
Self-regulation	5.2	.24	.77	5.3	.11	.60	5.0	.47	.62	5.3	.25	.80	4.7	.51	.78	5.1	.51	.68	5.0	.32	.83
Motivation	5.1	.30	.81	5.3	.33	.73	4.7	.38	.76	5.1	.38	.85	4.5	.53	.73	4.6	.32	.74	4.9	.31	.79
Empathy	4.8	.17	.85	5.2	.10	.72	4.6	.19	.77	5.1	.05	.87	4.5	.18	.76	4.8	.19	.77	4.6	.15	.82
Social skills	4.7	.10	.86	4.3	.08	.70	4.3	.13	.87	5.0	.03	.90	4.2	.19	.88	4.8	.15	.85	4.5	.13	.84

*Note* BD = Bangladesh, HK = Hong Kong & Macau, GR = Greece, PO = Portugal, SA = South Africa

**Table 4**  
**Factor Correlations Squared and Average R<sup>2</sup>**

Factors	1	2	3	4	5
1. Self-regulation	1.00	.48	.36	.55	<b>.63</b>
2. Self-awareness	.55	1.00	.49	<b>.59</b>	.35
3. Motivation	.44	.45	1.00	.34	.22
4. Empathy	.53	.53	.38	1.00	<b>.66</b>
5. Social skills	<b>.58</b>	.36	.30	.56	1.00
Average R <sup>2</sup>	.55	.64	.62	.59	.55

*Note.* The analysis and holdout samples are below and above the diagonal: respectively 4 of the 20 correlations in bold do not provide support for discriminant validity.

**Table 5**  
**Confirmatory Model Fit Statistics for Individual Countries**

Country	<i>n</i>	$\chi$ ( <i>df</i> = 199)	RMSEA	NFI	NNFI	GFI	AGFI
1 U.S.	303	468	.067	.89	.92	.88	.84
2. Bangladesh	152	443	.090	.75	.81	.79	.73
3 Hong Kong & Macao	79	451	.095	.75	.82	.77	.71
4 Greece	132	480	.078	.87	.91	.84	.79
5. Portugal	86	387	.089	.73	.82	.73	.65
6 China	210	422	.072	.85	.90	.85	.80
7. S. Africa	84	286	.099	.73	.82	.72	.64

*Note:* RMSEA = Root Mean Square Error of Approximation, NFI = Normed Fit Index, NNFI = Non-Normed Fit Index, GFI = Goodness-of-Fit Index. AGFI = Adjusted Goodness-of-Fit Index

It is evident that continued research is necessary to improve the EQI. The items must be further refined and larger samples taken in different countries. Overall, the instrument appears reasonably consistent.

### Structural Equations Model

It is expected that the emotional intelligence measures will perform in a predictable manner with other attitudinal measures. To the extent that this behavior is manifest in a causal model, further support is added to the validity of the EQI. For example, it was hypothesized that supervisory motivation should have a positive affect on the use of subordinates' problem solving strategy involving conflict situations. The same effect

should not be supported for the bargaining strategy. A structural equations model (SEM) as presented in Figure 1 was developed to incorporate these features and test the extent to which the nine study hypotheses are supported.

For testing the causal model, the observed variables were aggregated into two indicators for each factor in the model (Bagozzi & Heatherton, 1994; Rahim & Magner, 1995). The overall results are provided in Tables 7 and 8. Table 7 shows the coefficients for the entire sample and for each of the seven individual countries. Table 8 gives the summary statistics.

Of the 72 coefficients ( $\beta$ s) reported in Table 7, we expected 8 negative and 64 positive coefficients. Results show that 57 of the 72 coefficients were significant and they had the correct signs; nine coefficients had the correct signs, but they were nonsignificant; and only six nonsignificant coefficients had wrong signs.

1. Results presented in Table 7 provide support for Hypothesis 1. The path coefficients from self-awareness to self-regulation in all seven countries were positive and significant.

2. Hypothesis 2 was supported in six of the seven countries. The path coefficients from self-awareness to empathy was positive, but the coefficient for China was nonsignificant.

3. Hypothesis 3 was supported in all the seven countries as the path coefficients from self-awareness to social skills were positive and significant.

**Table 6**  
**Fit Statistics: United States Group Results**

Country	<i>n</i>	$\chi^2$ ( <i>df</i> = 452)	RMSEA	NFI	NNFI	CFI	GFI
2. Bangladesh	152	1125	.088	.81	.87	.88	.75
3. Hong Kong & Macao	79	1009	.078	.83	.90	.90	.73
4. Greece	132	1270	.081	.84	.89	.89	.74
5. Portugal	86	977	.085	.83	.90	.90	.66
6. China	210	1070	.075	.85	.90	.91	.81
7. S. Africa	84	952	.073	.83	.90	.90	.66

*Note:* RMSEA = Root Mean Square Error of Approximation, NFI = Normed Fit Index, NNFI = Non-Normed Fit Index, GFI = Goodness-of-Fit Index, AGFI = Adjusted Goodness-of-Fit Index

4. Hypothesis 4 was supported in four countries as the path coefficients from self-regulation to empathy were positive and significant. These coefficients were positive but nonsignificant in Portugal and South Africa and the coefficient for China was negative and nonsignificant.

5. Hypothesis 5 was supported in six countries as the path coefficients from self-regulation to social skills were positive, but the coefficient for Greece was nonsignificant.

6. Hypothesis 6 was supported in 5 countries as the path coefficients from empathy to motivation were positive, but the coefficient for China was non-significant and the path for Hong Kong and Macao was negative and nonsignificant.

7. Hypothesis 7 was supported in four countries as the path coefficients from social skills to motivation were positive, but the coefficient for China was nonsignificant and the coefficients for Greece and South Africa were negative and nonsignificant.

8 Hypothesis 8 was supported in all the 7 countries as the path from motivation to problem solving style were positive and significant.

9. Hypothesis 9 was supported in the U.S. as the path from motivation to bargaining was positive and significant. In Bangladesh, Hong Kong and Macao, Portugal, and China the path coefficients were positive but nonsignificant. In Greece and South Africa, these paths were positive and nonsignificant.

### **Discussion**

As discussed earlier, an attempt was made in the present study to overcome the problems of self-report measures of EQ; common method variance; and face, convergent, and discriminant validities of the items and subscales of the EQ measure. (1) In order to overcome the problem of misleading estimation of EQ in self-reports, we asked observers (subordinates) to predict then supervisors' EQ. We separated the measures of exogenous and endogenous variables by time to overcome the problems of common method variance. Another way to overcome this problem would be to collect data on these measures from different respondents. (2) In order to improve the face validity of the items, we selected items carefully to measure emotional intelligence [e.g., "Is well aware of the effects of his or her feelings on others" (self-awareness), "Maintains composure irrespective of his or her emotions" (self-regulation), "Operates from hope of success rather than fear of failure" (Motivation), "Understands the feelings transmitted through nonverbal messages" (Empathy), "Confronts problems without demeaning those who work with him or her" (social skills)]. (3) In order to improve the convergent and discriminant validities of the measurement instrument, we computed

**Table 7**  
**Structural Relationships Across Countries**

Hypothesis	All	U.S.	BD	HK	GR	PO	China	SA
1. Self-awareness → Self-regulation	.76*	.81*	.66*	.70*	.79*	.66*	.94*	.82*
2. Self-awareness → Empathy	.68*	.58*	.37*	.75*	.48*	.37*	1.90	.89*
3. Self-awareness → Social skills	.36*	.43*	.30*	.28*	.35*	.30*	.81*	.46*
4. Self-regulation → Empathy	.26*	.26*	.49*	.17*	.53*	.49	-1.08	.08
5. Self-regulation → Social skills	.64*	.52*	.61*	.68*	.70	.61*	.17*	.56*
6. Empathy → Motivation	.29*	.24*	.35*	-.16	.82*	.35*	.63	.82*
7. Social skills → Motivation	.46*	.60*	.35*	.89*	-.09	.35*	.16	-.01
8. Motivation → Problem solving	.22*	.21*	.12*	.26*	.27*	.12*	.15*	.33*
9. Motivation → Bargaining	-.08*	-.29*	-.11	-.05	.06	-.11	-.02	.22

Note: BD = Bangladesh, HK = Hong Kong & Macau, GR = Greece, PO = Portugal, SA = South Africa

\* $p < .05$ . (two-tailed)

**Table 8**  
**Goodness-of-fit Statistics Across Countries**

Statistic	All	U.S.	BD	HK	GR	PO	China	SA
$\chi^2$	677.3	211.1	264.9	272.1	202.2	264.9	204.8	358.0
df	68	68	67	67	67	67	67	67
RMSEA	.08	.09	.11	.11	.09	.11	.09	.13
GFI	.94	.89	.87	.86	.89	.87	.89	.83
AGFI	.90	.83	.79	.78	.83	.79	.83	.74
NFI	.94	.90	.85	.86	.92	.85	.90	.86

Note: df = 67 indicates model allowed for  $\eta$  error covariances. BD = Bangladesh, HK = Hong Kong & Macau, GR = Greece, PO = Portugal, SA = South Africa

exploratory and confirmatory factor analyses and retained 22 of the 40 items. The results provided satisfactory evidence of the five independent dimensions of the construct and the indicator reliability and Cronbach  $\alpha$  coefficients provided evidence of the internal consistency reliabilities of the subscales. The structural equations indicated how subordinates' perceptions of managerial EQ are associated with their own strategies of handling conflict. The results provided support for the seven hypotheses in the U.S. sample and in the combined samples. There were minor differences between countries in the results—only six of the 72 coefficients were nonsignificant and had wrong signs. The factor analyses and the structural equations together provided some evidence of the construct validity of the EQ instrument.

No previous study simultaneously examined in a causal modeling context the relationships of subordinates' perception of the supervisors' emotional intelligence components to each other and to their own conflict management strategies with supervisors. Overall, the results provided support for the model, which suggests that supervisors' self-awareness is positively associated with their self-regulation, empathy, and social skills; self-regulation is positively associated with empathy and social skills; empathy and social skills are positively associated with motivation. Finally, motivation, in turn, is positively associated with subordinates' use of problem solving strategy and negatively associated with bargaining strategy. The study contributed to our understanding of the linkage among various dimensions of EQ. It also contributed to our understanding of the process through which the various components of EQ influence subordinates' conflict-management strategies in the U.S. and six other countries.

### **Implications for Management**

The implication of this study is that by using their own emotional competencies managers can encourage subordinates to enhance their problem solving strategy. The perception of subordinates of their supervisors' use of these skills may have compound positive impact on the subordinates' problem solving strategy of managing conflict and job performance. Therefore, the challenge for a contemporary organization is to enhance the emotional intelligence of their managers. Managers may be trained to enhance their EQ (Cherniss & Adler, 2000; Goleman, 1998) so that their subordinates are encouraged to use more problem solving and less bargaining strategies of handling conflict. This will help the supervisors and subordinates to work together to attain goals.

Improving managers' EQ would involve education and specific job-related training. Managers should also be encouraged to enhance their skills through continuous self-learning. Goleman (1998) suggests that managers need emotional competence training which should "focus on the competencies needed most for excellence in a given job or role" (p. 251).

Organizations should provide appropriate reinforcements for learning and improving employees' essential emotional competencies needed for specific jobs. Recent literature shows that learning organizations are providing ample opportunities to managers for continuous learning that should help to improve their EQ. Supervisors and employees should also be trained to use problem solving and generally not to engage in win-lose or bargaining strategy of handling conflict. To attain this goal, training in conflict management of employees and supervisors and appropriate changes in organization design and culture would be needed (Rahim, 2001).

Education and training may be of limited value when it comes to improving supervisors' EQ. Organizations may have to adapt the policy of recruiting managers with vision and charisma who are likely to be high on EQ. There should also be appropriate changes in the organization design which would require creating flatter, decentralized, and less complex structures. Also there should be appropriate changes in organizational culture that provides rewards for learning new behaviors, ethics and morality, and continuous questioning and inquiry. These changes in the organization design and culture will encourage managers and employees to acquire competencies needed for improving their job performance and effectiveness.

### **Limitations**

The limitations of this field study should be noted. The reports of EQ and conflict styles that were taken from each respondent present the problem of common method variance, i.e., the lack of independence between criterion and predictor variables. An attempt was made to overcome the problem of common method variance by separating the measures of EQ and conflict styles by one week (Podsakoff & Organ, 1986). It should be noted that a study by Spector (1987) concluded that properly developed instruments are resistant to the method variance problem, to the present study we used two well-developed measurement instruments. But there are other researchers who disagree with Spector's conclusions (e.g., Bagozzi, Yi, & Phillips, 1991).

Data were collected from convenience samples that might limit generalizability of our results. It should be noted that the relationships found in this study are co-relational and not causal. The analysis suffers from the small sample sizes for the individual countries, but the results seem to support a somewhat consistent cross-country pattern. There were some differences in the results among countries, but it is not possible to determine whether these differences came from the small and convenience samples or differences in cultures. Larger and representative samples are needed from different countries to assess the effects of cultural differences on the model on emotional intelligence and conflict management strategies.

### **Directions for Future Research**

Further research is needed to enhance our understanding of the interrelationships of EQ, conflict-management styles, and effectiveness of employees and supervisors. An important area of future research concerns carefully designing and evaluating the effects of intervention on supervisory EQ in enhancing positive conflict management styles and effectiveness. Field experiments are particularly useful in evaluating the effects of enhancing EQ of supervisors on individual and organizational outcomes. There is also need for scenario-based studies and laboratory studies that control some of the extraneous variables to better understand the effects of EQ reported in the present study. Attempts should be made to obtain independent measures of the criterion variables. Also it will be useful to investigate the differences in the perceptions of observers regarding the leadership performance of managers with low and high EQ.



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