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A process model of social intelligence and problem-solving style for conflict management

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Abstract

Purpose – This study aims to explore the relationship between social intelligence (SI) and problem-solving (PS) style of handling conflict.

Design/methodology/approach – Data on SI and PS were collected with questionnaires from 406 faculty members, and the data were averaged by departments. This resulted in a sample of 43 departments, and all the data analyses were performed with this sample of 43. SI is defined as the ability to be aware of relevant social situations, to handle situational challenges effectively, to understand others' concerns and feelings and to build and maintain positive relationships in social settings.

Findings – Data analyses with LISREL at the department level suggest that SI is positively associated with PS.

Research limitations/implications – Data were collected from only one public university in the USA, which might limit the generalizability of the results. The department chairs need to acquire the four components of SI to improve faculty members' PS. This will hopefully lead to constructive management of many faculty–department chair conflicts.

Originality/value – One of the strengths of this study is that the measures of endogenous and exogenous variables were analyzed at the department level, not individual level. This study contributed to our understanding of the relationships of situational awareness, situational response, cognitive empathy and social skills with each other and to PS.

Keywords Leadership, Problem solving, Intelligence, Conflict, Social intelligence

Paper type Research paper

Intelligence and conflict management are two significant constructs in social sciences, and there is great interest among scholars on these constructs that is evidenced by the theoretical and empirical studies that are coming in steady streams in specialized journals. Unfortunately, there is no empirical study that investigated the relationship between them. To our knowledge, there is no study that explored the relationship between supervisors' social intelligence and subordinates' engagement in problem-solving behavior to deal with interpersonal conflict.

People generally associate intelligence with IQ which is a measure of cognitive, academic or mathematical–logical intelligence. Grade point average, scholastic aptitude test and other admission tests are surrogates of cognitive intelligence (Rahim, 2014). Academic institutions offer programs that are generally associated with this intelligence. Unfortunately, literature on management generally acknowledges the inadequacy of cognitive intelligence as a predictor of one's success in life or effective leadership. Judge *et al.* (2004) meta-analysis suggests that there is low correlation between cognitive intelligence and leadership. Is it possible that there are other types of intelligence that are necessary for successful leadership?



In recent years, scholars have been discussing other dimensions of intelligence: emotional intelligence, social intelligence and cultural intelligence that may be positively correlated with PS (van Dyne *et al.*, 2009; Gardner, 1999; Mayer *et al.*, 2008; Sternberg, 2002). Social intelligence (SI) is differentiated from general, emotional and cultural intelligence, but there are some overlaps among these constructs. The value-added contribution of the present study is that it develops and tests a process model of the relationships of academic department chairs' SI components to each other and to faculty members' use of the PS. In the present study, academic leaders' SI is linked to faculty members' PS with data collected with questionnaires from 43 departments at a public university in the USA.

Social intelligence construct

John Dewey (1909) was the first psychologist to suggest that the “ultimate moral motives and forces are nothing more or less than *social intelligence*—the power of observing and comprehending social situations” (p. 43). It is generally recognized that Thorndike made a significant contribution by popularizing the construct through an article that appeared in *Harper's Magazine* in 1920. He suggested three components of intelligence: abstract (the ability to understand and manage ideas and symbols), mechanical (the ability to learn to understand and manage things) and social (the ability to manage and understand men and women, boys and girls, and act wisely in human relations) (p. 228). This definition of SI had both cognitive and behavioral components. Sternberg (2002), in his numerous studies provides empirical evidence that there are three types of intelligence – creative, analytical and practical – that are needed for one's success. Sternberg's practical intelligence is very similar to SI. Recent theories suggest similar concepts – intrapersonal (emotional) and interpersonal (social) intelligence (Gardner, 1999) and emotional intelligence (Goleman, 1998; Mayer *et al.*, 2008).

Scholars now agree that SI is associated with one's ability to understand thinking, feelings and behaviors of other people; to interact with them properly; and to act effectively in various situations (Kihlstrom and Cantor, 2000; Sternberg, 2002; Thorndike, 1920). It is appropriate to build on this definition and broaden the concept of SI. For the present study, we have adopted the definition of SI suggested by Rahim (2014, p. 46) as the ability to be aware of relevant social situational contexts; to deal with the contexts or challenges effectively; to understand others' concerns, feelings and emotional states; and to speak in a clear and convincing manner knowing what to say, when to say it and how to say it and to build and maintain positive relationships with others. This definition consists of four types of abilities – situational awareness, situational response, cognitive empathy and social skills. This four-category SI nomenclature is used in the present study. The first two abilities, situational awareness and situational response, are necessary for one's career success and effective leadership and were classified as primary abilities (Rahim, 2014). Situational awareness refers to one's ability to collect information for the diagnosis and formulation of problem(s); situational response refers to one's ability to use this information to make effective decisions to obtain desired results. These primary abilities are essential for success as a leader in an organization. The secondary abilities are cognitive empathy and social skills, refer to the abilities to understand the feelings and needs of people, to communicate with them effectively and to build and maintain relationships. These two abilities can help a leader to remain aware of various social situational contexts, thus improve their situational response competence. Next, this study presents a description of the theoretical basis of the four SI components and interrelationships among them.

Situational awareness

This component of SI is associated with one's ability to comprehend or assess relevant social situational contexts. This ability is also described as social perceptiveness by [Zaccaro *et al.* \(1991\)](#) and alternately as contextual intelligence by [Sternberg \(1985\)](#), [Bennis and Thomas \(2002\)](#). [Albrecht \(2007\)](#) defines situational awareness as the ability to read situations and comprehend social context influencing behavior, and to choose effective strategies, and includes situational awareness as one of the five components of SI, along with presence, authenticity, clarity and empathy.

To diagnose situations timely and to formulate a problem correctly, leaders in organizations need to collect relevant information. However, not all leaders possess the capability to make an appropriate assessment of situational variables. If leaders lack situational awareness, they will not be able to understand the relevant situational variables and formulate the problems correctly. When leaders formulate a problem wrongly, it could lead to Type III error, defined as the probability of solving a wrong problem when one should solve the right problem ([Mitroff, 1998](#); [Mitroff and Silvers, 2010](#)). Only those leaders who possess this ability are able to collect necessary information and formulate a problem correctly, thereby reducing the incidence of this error.

Existing research found that, by enhancing situational awareness, the effectiveness of problem-solving can be significantly improved in team work, after controlling for the difficulties of the tasks and the initial problem-solving skills of the teams ([Pedaste and Sarapuu, 2006](#)). In addition, [O'Brien and O'Hare \(2007\)](#) found that participants in training programs with high situational awareness performed well, irrespective of the training conditions. [Mayo and Nohria \(2005\)](#) suggest that a leader's ability to understand and adapt to different situational contexts is associated with successful leadership.

When leaders do not have adequate information on a problem or a potential business opportunity, they are likely to engage in internal and/or external environmental scanning. In addition, the leaders may seek help from experts to gain an overall understanding of the problem. When experts have different and even contradictory assessments of a problem, it is up to the leader to decide which problem formulation reflects social reality and is to be accepted. Again, this task requires the leader to possess adequate situational awareness. Hence, we suggest that leaders with higher situational awareness ability are better able to recognize patterns associated with their work environment and formulate the problem correctly.

Situational response

This component is associated with one's competence or ability to adapt to or deal with any social situations effectively. Previous literature describes similar leadership capabilities such as behavioral flexibility of leaders ([Zaccaro *et al.*, 1991](#)) and adaptive capacity ([Bennis and Thomas, 2002](#)). Empirical studies have provided support to the positive relationship between organizational performance and leadership flexibility, measured by subordinates' rating or by the mastery of opposing but complementary behaviors ([Kaiser and Overfield, 2010](#)).

However, situational response is a broader concept than behavioral flexibility or adaptive capacity. Situational response is also different from situational awareness ([Albrecht, 2007](#); [Mayo and Nohria, 2005](#)). These two components have overlaps, but are conceptually independent. It is possible for leaders to recognize or diagnose a situation or problem correctly, but not be able to make a decision leading to desirable outcomes. In other words, it is possible for a leader to have high or low abilities associated with these two

components. A high-high leader is more effective than a high-low, low-high or low-low leader.

These two abilities are often utilized in typical two-step processes in organizational learning: detection and correction of error (Argyris and Schon, 1996), diagnosis and intervention in conflict (Rahim and Bonoma, 1979) and capabilities “to diagnose an issue and its causes” and “to decide on the best course of action” (Schmidt and Tannenbaum, 1960). The two steps in these learning processes – diagnosis or detection of error and intervention or correction of error – correspond with the two components of SI – assessment and responses to situational contexts.

Existing literature on leadership is focused on matching leadership styles with situational variables to improve followers’ job performance and satisfaction, but not enough research has been done to identify the unique situations for which creative responses (leadership styles) would be needed to improve outcomes. Even if a leader can diagnose a situation correctly, he or she may not possess the necessary competence to make an effective decision to deal with it. Leaders need to possess both situational awareness and response competencies to define the situational variables and respond to them appropriately.

Situational awareness and situational response are two distinct abilities that are essential for effective leadership. The following sections continue to discuss how the other two components, cognitive empathy and social skills, can help leaders to improve their effectiveness.

Cognitive empathy

Empathy is associated with understanding the emotions of others and being sensitive to changes in their feelings and thoughts (Goleman, 2005; Albrecht, 2007; Ang and Goh, 2010). Empathy has four components: cognitive, intellectual, behavioral and affective. In this study, we particularly use cognitive empathy, which refers to one’s ability to consciously put oneself into the mind of another person, who can be either inside or outside the organization, to understand what that person is thinking or feeling (Batson, 2009; Decety, 2015; Decety and Yoder, 2016).

Regarding the focus on SI, Kaukiainen *et al.* (1999) suggested that the cognitive empathy is an essential part in forming SI (p. 83). In organizations, leaders should have cognitive empathy to be aware of feelings and thoughts of subordinates, colleagues and people from the outside of the organization. Using cognitive empathy to connect people should help leaders in using their social skills effectively. Therefore, cognitive empathy should be positively associated with social skills.

Social skills

This component of SI is associated with one’s ability to speak in a clear and convincing manner that involves knowing what to say, when to say it and how to say it. Social skills also include building and maintaining positive relations and act properly in human relations (Rahim, 2018, pp. 121-122; Riggio, 1986). Literature review by Baron and Tang (2009; see also Riggio and Throckmorton, 1988) shows that social skills can positively influence a number positive outcomes in organizations. Some of these outcomes are higher job performance (Hochwarter *et al.*, 2006), faster promotions and higher salaries (Belliveau *et al.*, 1995) and better results in negotiations (Lewicki *et al.*, 2005). Negotiation is a part of conflict management, and we are suggesting that social skills and other components of SI are positively associated with PS.

Leaders in an organization use social skills to continuously gather relevant information from inside and outside the organization to improve their situational awareness.

Competency in social skills helps leaders communicate and justify their decisions and vision to subordinates effectively. Within an organization, people, who have high social skills create or recognize opportunities, can gain acceptance for projects involving cross-divisional resources through social networks (Kleinbaum and Tushman, 2007; Hitt *et al.*, 2011). Moreover, Baron and Markham (2000) and Baron and Tang (2009) suggested that entrepreneurs' social skills competencies might play a role in their success due to effective interactions with others. Hence, entrepreneurs who possess well-developed social skills gain important competitive advantages in success of their new ventures over others who are lower on this competency.

In the previous section, we suggested that cognitive empathy directly affects social skills and indirectly influences situational awareness. In other words, social skills mediate the relationship between cognitive empathy and situational awareness.

Problem-solving approach to conflict management

Conflict is inevitable in organizations, and academic institutions are no exception to this. One of the least investigated area of interpersonal conflict is between department chairs and faculty (Hancks, 2014; Smith and Hellige, 1998). The present study is an attempt to show the extent to which department chair's SI influences faculty members' problem-solving approach to conflict management (PS). The PS involves a collaborative process through which parties, who see different aspects of a problem, can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible (Gray, 1989, p. 5; see also Rahim, 2011). Using a problem-solving strategy to manage conflict leads to higher job performance and satisfaction (Rahim *et al.*, 2001).

An effective problem-solving approach to managing conflict may lead to creative processes. These processes may lead to the diagnosis and intervention in existing and new problems. Diagnosis involves open communication, clearing up misunderstanding and identifying the causes of conflict. Intervention refers to the solution of the real problem(s) to provide maximum satisfaction of concerns of both parties. SI and PS involve positive affect, and we are suggesting that SI will lead to affect like problem-solving approach to conflict management.

Based on previous discussion, the following hypotheses were formulated:

- H1. Social skills mediates the relationship between cognitive empathy and situational awareness.
- H2. Situational awareness mediates the relationship between social skills and situational response.
- H3. Situational response mediates the relationship between situational awareness and faculty members' problem-solving approach to conflict management.

The relationships proposed in the hypotheses in this study are presented in Figure 1. The solid lines indicate significant relationships, and broken lines indicate indirect relationships.

Method

Sample and procedure

Data were collected from a collegiate sample of 406 faculty at a state university in the USA where the usable response rate was 48 per cent. Average age, teaching experience and working experience with the present departmental chair (DC) in years were 45.10 (SD = 3.82), 14.4 (SD = 10.99) and 4.61 (SD = 5.26), respectively. About 50.5 per cent of

the respondents and 35.2 per cent of the DCs were female. About 84 per cent of the respondents were white, 5 per cent black, 4.8 per cent Asian, 3.6 per cent Hispanic and 3.6 per cent other. About 18.1 per cent of the respondents were professors, 23.8 per cent associate professors, 24.1 per cent assistant professors, 15.9 per cent lecturers, 11.2 per cent adjunct professors and 6.8 per cent part-time. About 55.7 per cent of the respondents had doctoral degrees, 38.3 per cent had master's degrees and 6 per cent had other qualifications.

Measurement

Social intelligence. The four components of supervisors' SI were measured with 28 items of the Rahim Social Intelligence Test (RSIT) developed by [Rahim \(2014\)](#). The RSIT items were changed to measure faculty perceptions of their respective department chair's SI. The RSIT 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 in multiple samples. Considerable attention was devoted to the study of published instruments on SI. The final revision of the instrument was made on the basis of a confirmatory factor analysis of items.

The RSIT uses a five-point Likert scale (5 = strongly agree [...] 1 = strongly disagree) for ranking each of the items, and a higher score indicates a greater SI of a supervisor. The subscales were created by averaging responses to their respective items. Sample items are: "Our DC can size up a situation, he/she finds himself/herself in, rather quickly (Situational awareness)"; "Our DC usually adapts appropriately to different situations" (situational response); "Our DC understands people's feelings transmitted through nonverbal messages" (cognitive empathy); and "Our DC interacts appropriately with a variety of people" (social skills). [Rahim \(2014\)](#) and [Rahim et al. \(2014\)](#) provided evidence of internal consistency and indicator reliabilities and convergent and discriminant validities of the instrument, and that it was free from social desirability response bias.

Problem-solving approach to conflict management. PS was associated with the dual concern model for managing conflict ([Rahim, 1983, 2011](#)). It was measured with five items adapted from the Rahim Organizational Conflict Inventory-II's ([Rahim \(1983\)](#)) integrating style subscale of conflict management. Each item was ranked on a five-point scale (strongly agree = 5 [...] strongly disagree = 1). Sample items for the scale are, "I try to investigate an issue with my DC to find a solution acceptable to us". The scale was created by averaging the responses to the items, and a higher score indicated greater use of the problem-solving approach to conflict management by faculty. In the present study, the Cronbach's α internal consistency reliability of this scale was 0.93.

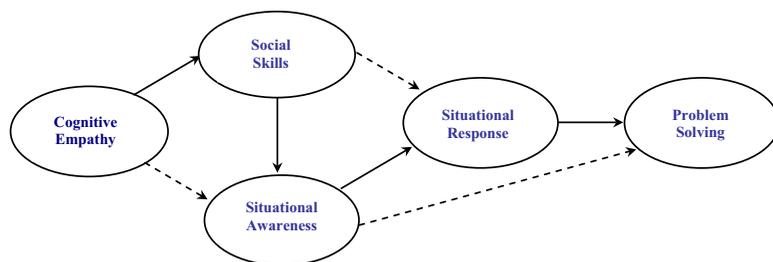


Figure 1.
A model of intelligent leadership and problem-solving style for conflict management

Analysis and results

The first part of the analysis was designed to test the psychometric properties of the measures of SI and PS. The second part of the analysis was designed to test the three study hypotheses. Data analyses were performed with SPSS 24 and LISREL 9.2 (Jöreskog and Sörbom, 1996a, 1996b) statistical packages. For LISREL analysis, data from 406 respondents were averaged for each department, which resulted in a sample of 43 groups.

Validity assessment

Confirmatory factor analysis (CFA) of the SI and PS items were computed. CFA is needed for testing the construct validity of the measures of SI and PS. The results show acceptable fit indexes for the two instruments which indicates their construct validity (see Table I).

Common method variance. If the five dimensions of SI and PS were not present in the two questionnaire measures or if common method variance was present, then all the items measuring the SI and PS will load on a single factor. If a single-factor solution fits the data well, one can conclude that common method variance is mainly responsible for explaining the relationships among the variables (Mossholder *et al.*, 1998).

The results from the one-factor solution shows that the fit indexes (RMSEA = 0.20, standardized RMSR = 0.08, NFI = 0.80, CFI = 0.85, IFI = 0.86, RFI = 0.75) were unsatisfactory. In other words, the single-factor model did not fit the data well, and as a result, the absence of five dimensions or the presence of common method variance in the measures should not be assumed. As discussed later, we also performed another stronger analysis to check the common method variance in the data.

Convergent validity. The average variance extracted by all the items loading on a given factor measures convergent validity and should exceed 0.50 (Fornell and Larcker, 1981; Carr, 2002). These values were averaged for factors, and all of the average R^2 exceeded 0.85, the threshold for supporting convergent validity.

This validity for the five subscales of the two instruments was also assessed by examining whether each item had a statistically significant factor loading on its specified factor (Anderson and Gerbing, 1988; Netemeyer *et al.*, 1990). Factor loadings were highly significant, with a minimum z -values of 4.06 ($p < 0.001$). These results support the convergent validity of the subscales.

Discriminant validity. In one test for discriminant validity, the squared correlations between factors should be less than the average variance extracted for each factor (Fornell and Larcker, 1981; Carr, 2002). The results show that, in each sample, there is strong support for the discriminant validity between SI and PS.

Statistic	Measurement model		Structural equations model
	One-factor	Five-factors	
χ^2/df	3.15	1.42	1.66
RMSEA	0.22	0.09	0.12
Standardized RMSR	0.08	0.03	0.04
Normed fit index	0.80	0.94	0.91
Comparative fit index	0.85	0.98	0.96
Incremental fit index	0.86	0.98	0.96
Relative fit index	0.75	0.89	0.87

Note: $N = 43$ departments

Table I.
LISREL summary statistics

A second test for discriminant validity involves pair-wise comparisons of factors using a chi-square difference test (Anderson and Gerbing, 1988). For each pair of factors, two models are developed. In one model, the two factors are defined by their respective items. In the second model, the correlation between the factors is constrained to 1.00. The chi-square difference test can be applied to test whether the appropriately defined two-factor model provides statistically better fit than the constrained model. In each pair-wise comparison of factors, the constrained model resulted in a significantly higher χ^2 value supporting discriminant validity. The threshold value for this chi-square difference test ($p < 0.05$) is χ^2 of 3.84 with 1 df. This test supported factor discrimination for all factors. Overall, there is adequate support for discriminant validity.

Univariate normality. The samples exhibited a high degree of univariate normality with skewness and kurtosis statistics well within the acceptable levels of 1 and 7 for all items (Curran *et al.*, 1996).

Table II shows the means, standard deviations, Cronbach's alpha. Overall, these coefficients are satisfactory (Nunnally, 1978).

Each item has a reported R^2 that measures the item's variance explained by its factor. This measure of indicator reliability should exceed 0.50 for each of the observed variables (Fornell and Larcker, 1981). The R^2 values for all the items in each country ranged between 0.84 and 0.95. These reliabilities were judged sufficient. The VIFs (ranged between 2.64 and 6.82) were lower than 10.00 which indicate that multicollinearity was not a problem.

Structural equations model

Two LISREL models were computed to test the three hypotheses. The first model tested all the relationships in Figure 1 represented by the solid and broken lines. As expected, the links represented by the broken lines were not significant, but the remaining links represented by the solid lines were all significant. In the second model, only the links represented by the solid lines were tested, and the results are presented in Table III. The results provided full support for the three study hypotheses.

H1 was concerned with the mediation effect of social skills on the relationship between cognitive empathy and situational awareness. As shown in Table III, the two path coefficients from cognitive empathy to social skills ($\beta = 0.85$) and from social skills to situational awareness ($\beta = 0.99$) were positive and significant. These path coefficients provided full support for *H1*.

H2 was concerned with the mediation effect of situational awareness on the relationship between social skills and situational response. As shown in Table III, the two path coefficients from social skills to situational awareness ($\beta = 0.99$) and from situational

Table II. Means, standard deviations, Cronbach's α and indicator reliabilities, Pearson's correlations and variance inflation factor

Variable	<i>M</i>	<i>SD</i>	α	IR	1	2	3	4	VIF
1. Situational awareness	3.66	0.95	0.80	0.89					4.38
2. Situational response	3.50	1.07	0.91	0.93	0.86				5.98
3. Cognitive empathy	3.17	0.84	0.54	0.88	0.69	0.74			2.64
4. Social skills	3.49	1.21	0.88	0.62	0.86	0.89	0.78		6.83
5. Problem solving	4.00	0.82	0.93	0.99	0.41	0.43	0.48	0.45	

Notes: *N* = 406; IR = Indicator reliability; VIF = Variance inflation factor. All the correlations are significant at $p < 0.001$ (two-tailed)

awareness to situational response ($\beta = 0.99$) were positive and significant. These path coefficients provided full support for *H2*.

H3 was concerned with the mediation effect of situational response on the relationship between situational awareness and faculty members' PS. As shown in Table III, the path coefficient from situational awareness to situational response ($\beta = 0.99$) was positive and significant and the path coefficient from situational response to PS ($\beta = 0.63$) was positive and significant. These path coefficients provided full support for *H3*.

The fit indexes for the full structural equations model (RMSEA = 0.12, RMSR = 0.04, $\chi^2/df = 1.66$, NFI = 0.91, CFI = 0.96, IFI = 0.96) were satisfactory. Overall, these fit indexes indicate that the model, indicated by the solid lines in Figure 1, fits well with the data. The RMSEA of 0.12 is greater than 0.07, which was probably caused by the sample size ($N = 43$) aggregated at the department level.

As discussed before, we computed the single-factor analysis which did not support the presence of common method variance. In addition to this, we randomly split the questionnaire responses to items of each department into two units (Unit 1 and Unit 2). We computed two structural equations models. The first model used the independent variables from Unit 1 and the criterion variable from Unit 2. The second model used the independent variables from Unit 2 and the criterion variable from Unit 1. The results portrayed in Table III show that all the links in the split samples were significant. The fit indexes deteriorated somewhat in the two models. The two additional structural equations models provide strong support for the model presented in Figure 1.

Discussion

The results provided moderate to full support for the theoretical model presented in Figure 1. In other words, the model fits the data collected from faculty members. Previous studies did not test the relationships of faculty perception of the department chair's SI components to each other and to PS. The study contributed to our understanding of the linkage between situational awareness and situational response and between situational response and PS. It also contributed to our understanding of the relationships of cognitive empathy to social skills and between social skills to situational awareness.

The study provided acceptable evidence of convergent and discriminant validities and internal consistency and indicator reliabilities of the measure of SI and PS. Evidence from the present study and the studies done before (Rahim, 2014; Rahim *et al.*, 2014) provided support for construct validity of the measure of department chairs' SI and faculty's PS (Bagozzi *et al.*, 1991).

Path	Parameter		Statistic		Statistic	
	Statistic	z-value	Unit 1	z-value	Unit 2	z-value
CE → SS	0.85	5.49***	0.81	4.85***	0.61	3.26**
SS → SA	0.99	10.42***	0.99	7.15***	0.94	7.47***
SA → SR	0.99	12.06***	0.99	7.15***	0.98	10.10***
SR → PS	0.63	4.85***	0.42	2.39*	0.31	2.27*

Notes: Aggregated $N = 43$ departments. Aggregated $N = 33$ departments for Unit 1 and Unit 2. These values are based on the causal model run on the covariance matrix. CE = Cognitive empathy, SS = Social skills, SA = Situational awareness, SR = Situational response, PS = Problem solving approach to conflict management * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Table III.
Parameter estimates
for structural
equations

Implications for management

The findings of the study have significant implications for management and organizations. The department chairs need to acquire the four components of SI to improve faculty members' PS. This will hopefully lead to constructive resolutions of many faculty–department chair conflicts. Interventions may be needed to enhance department chairs' SI competencies that would involve education and specific job-related training (Flowers *et al.*, 2014; Seo and Barrett, 2007). Department chairs should also be encouraged to enhance their SI abilities through continuous self-learning. Universities should provide positive reinforcements for learning and improving department chair's SI competencies needed for various academic disciplines.

Training can help improve department chairs' SI, but this may not be sufficient to fully enhance the four components of SI, which may have a positive influence on faculty members' teaching, teaching and service. Academic institutions may have to adapt the policy of recruiting department chairs who are likely to possess the four components of SI. This suggests that academic institutions should reexamine their traditional criteria for selecting academic leaders.

Academic institutions offer programs that generally encourage the development of students' cognitive intelligence. As discussed before, literature on management and administration generally acknowledges the inadequacy of cognitive intelligence as a predictor of one's success in life or effective leadership. One of the major implications of this study is that academic institutions should pay adequate attention for enhancing SI of students. This will involve changes in curriculum and teaching methods. Although this study took place in an academic setting, its findings are applicable to business and other organizations.

Strengths and limitations

One of the strengths of this study is that the measures of endogenous and exogenous variables were analyzed at the department level, not individual level. The single-factor CFAs of the observed variables found no evidence of common method variance. If common method variance was present, the items of the independent and criterion measures will not significantly load of the five *a priori* factors. Also, the split department tests indicated no presence of problems of common method variance (Podsakoff *et al.*, 2003). Limitations of this field study should be noted. Data were collected from one public university in the USA might limit generalizability of the results.

Directions for future research

In academic institutions, further research is needed to enhance our understanding of the relationships of SI and the effectiveness of department chairs' leadership behaviors. Other criterion variables for future research should include some indicators of department chairs' leadership effectiveness and faculty members' teaching and research performance, satisfaction and organizational citizenship behavior. An important area of future research concerns carefully designing and evaluating the effects of SI training in enhancing the aforementioned criterion variables. Field experiments are particularly useful in evaluating the effects of SI intervention on individual, group and organizational outcomes. There is also need for scenario-based and laboratory studies that control some of the extraneous variables to better understand the effects of department chairs' SI. Also, it will be useful to investigate the differences in the perceptions of faculty regarding the performance of various types of academic leadership with low and high SI.

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