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Koh, Cheng Boon; O' Higgins, Eleanor

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Relationships between emotional intelligence and perceived and actual leadership effectiveness in a military context

Abstract

Despite the importance of emotional intelligence and leadership effectiveness, few studies have been conducted in real-life contexts and few have distinguished between perceived and actual leadership effectiveness. This repeated measures study involving 86 officer cadets from the Republic of Singapore Air Force (RSAF) investigated these relationships in a military context. Quantitative data were collected from two self-report questionnaires: the Wong and Law Emotional Intelligence Scale and the Perceived Leadership Effectiveness Scale. These two self-report tools were also administered to the participants' peers to examine the agreement between self and other assessments of emotional intelligence. A behavior-based leadership assessment rubric completed by the participants' supervisors was used to determine actual leadership performance. Significant positive relationships were found between emotional intelligence and both perceived and actual leadership effectiveness, as assessed by peers and supervisors, respectively. This study contributes to the understanding of emotional intelligence as a global construct, and demonstrates that it is significantly associated with leadership effectiveness in a military training context. The findings have practical implications for using emotional intelligence to enhance leadership effectiveness.

Keywords: emotional intelligence; leadership effectiveness; self-other agreement; peer appraisal; supervisors' ratings; military context

Public Significance Statement

This study suggests that EI is significantly associated with both perceived and actual leadership effectiveness, assessed by peers and supervisors respectively. The congruity between self and peer ratings of EI was also found to be associated with actual leadership effectiveness. Theoretically, these findings indicate that leaders with good self-awareness in their EI are perceived and assessed to be effective leaders. Practical implications such as leadership development in EI competency so that they can gain trust and confidence from their followers which are critical for military are discussed.

Relationships between emotional intelligence and perceived and actual leadership effectiveness in a military context

Since the 1990s, human relationships and team dynamics have been recognized as important components of successful organizational performance and project management. Some researchers attribute this developing field of research to the growth of service-oriented industries, the increasing number of knowledge workers, or the effect of interpersonal skills on team performance (Jordan & Ashkanasy, 2006; Palmer, Walls, Burgess, & Stough, 2001). Researchers have identified a relationship between emotional intelligence (EI) and leadership effectiveness (LE) (Clarke, 2010; Cowley, 2004; Moore & Cain, 2007; Rosete & Ciarrochi, 2005; Sunindijo, Hadikusumo, & Ogunlana, 2007), which has in turn been shown to affect organisational performance, employee morale, team dynamics, and retention (Cowley, 2004; Jordan & Ashkanasy, 2006; Moore & Cain, 2007). Only a few studies (e.g. Mayer, Salovey, & Caruso, 2002) have noted that the relationship between emotional intelligence and perceived leadership effectiveness may be different than the relationship between emotional intelligence and actual leadership effectiveness.

In their review of leadership studies from 1990 to 2005, Porter and McLaughlin (2006) identified one of the most significant deficiencies of leadership studies as the failure to consider the context in which the leaders perform their roles as leaders. Other studies also reported that participants such as students in classroom settings, and perceptual judgment or project work are used to simulate leader and follower interactions and to assess leadership quality (Clapp-Smith, 2009; Douglas, Frink, & Ferris, 2004; Kobe, Reiter-Palmon, & Rickers, 2001; Tate, 2008; Walter, Cole, & Humphrey, 2011; Walumbwa, Wu, & Orwa, 2008). This makes it difficult to generalize the findings of many previous studies to real-world contexts.

This study addresses these gaps by examining the relationships between emotional intelligence and both perceived and actual leadership effectiveness in a military context.

Emotional Intelligence

The concept of emotional intelligence (EI) was first proposed by Salovey and Mayer (1990), who derived it from the multiple intelligence theory developed by Wechsler (1940). Building on Wechsler's work, Salovey and Mayer (1990) developed measurement tools to assess the non-cognitive factors of general intelligence based on the ability approach. Mayer,

Salovey, Caruso, and Sitarenios (2003) defined EI as the ability to perceive emotion in oneself and others, to use this information to guide one's thinking and actions, and to understand and manage these emotions and emotional processes. In 1997, Mayer and Salovey refined the definition of EI, expanding it from a three- to a four-branch model: 1) perceiving emotions; 2) using emotions to facilitate thinking; 3) understanding emotions; and 4) managing emotions to achieve desired outcomes.

A number of ability-based measures have been developed including the Mayer Emotional Intelligence Scale (MEIS; Mayer, Salovey, & Caruso, 2002), Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, Caruso, & Sitarenios, 2003), and the Wong Emotional Intelligence Scale (WEIS; Wong, Wong, & Law, 2007).

Self-report Surveys

The self-report approach to measuring EI was derived from the understanding that individuals can provide an accurate perception of their emotional states and competencies. According to this model of emotions, awareness is the key skill in the affective domain that leads to better emotional management and social awareness, which in turn influences relationship management (Eich, 2008; Muiya, 2009). In a meta-analysis, Van Rooy and Viswesvaran (2004) concluded that self-report measures were widely used and there was empirical evidence to demonstrate their validity and reliability. The WLEIS self-report measure was used in this study (Wong & Law, 2002).

WLEIS

Wong and Law (2002) proposed a self-report EI measure that could be more easily administered than the lengthy, complex 360-degree, multi-source, and multi-rater feedback measures. Their exploratory study used three groups of part-time MBA and undergraduate students in a large Hong Kong University to identify 36 items that were relevant for measuring the EI of individuals.

In response to criticisms of the poor definition of EI (Law, Wong, & Song, 2004), Wong and Law (2002) adopted the four-dimensional definition proposed by Davies, Stankov, and Roberts (1998) to develop the WLEIS. The four EI abilities are as follows.

- 1) SEA (self-emotional appraisal): appraisal and expression of emotion in the self.
- 2) OEA (others' emotional appraisal): appraisal and recognition of emotion in others.
- 3) ROE (regulation of emotion): regulation of emotion in the self.
- 4) UOE (use of emotion): use of emotion to facilitate performance.

The internal consistency reliability of the WLEIS has been reported as between .83 and .90, which is acceptable for self-report measures (Conte, 2005; Growing, 2001;

Lindebaum & Cartwright, 2010; Murphy, 2006; Sala, 2002). Some researchers (Gooty, Connelly, Griffith, & Gupta, 2010; Joseph & Newman, 2010a, 2010b; Shi & Wang, 2007) have espoused the psychometric validity of this measurement tool and its incremental validity over and above personality traits and cognitive abilities (Law, Wong, & Song, 2004; Wong & Law, 2002), which was one reason for the use of the WLEIS in this study. Other considerations were the call for more research on the construct validity of existing self-report EI measures (e.g., Joseph & Newman, 2010b; Lindebaum & Cartwright, 2010; Matthews, Zeidner, & Roberts, 2004) and the call by Mayer, Salovey, & Caruso (2008) for researchers to consider and use context-specific EI measures.

Limitations of the WLEIS

Although studies have found that the WLEIS has acceptable reliability (coefficient $\alpha=.87$), a few weaknesses have been identified (Wong, Law, & Wong, 2004). First, respondents might give false responses because of social desirability bias (Ciarrochi, Caputi, & Mayer, 2003; Geher, Warner, & Brown, 2001; Shi & Wang, 2007). As emotional intelligence comprises a set of abilities, people sometimes respond to self-report questionnaires in such a way as to project a positive image (Law, Mobley, & Wong, 2002). The second limitation is that respondents might not be able to accurately judge their emotional abilities or responses. This has been supported by studies that have reported low correlations between self-reports of ability and actual ability (Ostroff, Atwater, & Feinberg, 2004; Paulhus, Lysy, & Yik, 1998).

Despite the various limitations of this approach, the self-report method has been one of the most popular tools in research, management consultation, and real-world applications (MacKenzie & Podsakoff, 2012; Muiya, 2009). Many researchers (Austin, 2005; Joseph & Newman, 2010b; Murphy, 2006; Petrides & Furnham, 2003) have asserted that self-report is an effective tool to measure affective and “private” emotions that cannot be observed by others and they have advocated the use of self-report measures for emotional intelligence because the affective domain is usually private and the expression of emotions is usually not well understood by others or easily observed (Bagshaw, 2002; Joseph & Newman, 2010b).

Observer Ratings

Given the limitations associated with self-report measures, researchers such as Dulewicz and Higgs (1999; 2000) have proposed using observations by peers and superiors as an alternative measure. A number of studies (e.g., Kobe, Reiter-Palmon, & Rickers, 2001; Lindebaum & Cartwright, 2010) have advocated for the use of observation to eradicate the common method bias and overcome some of the limitations of self-report measures, such as

social desirability and faking. Other researchers have proposed a more robust research design, such as using multi-rater assessments, to overcome these problems (Dulewicz & Higgs, 2000; Fleenor, Smither, Atwater, Braddy, & Sturm, 2010; Joseph & Newman, 2010b).

In a study involving 358 managers across the global Johnson & Johnson Consumer and Personal Care Group, Cavallo (2000) found strong inter-rater agreement between leaders' EI scores as rated by supervisors, peers, and subordinates. However, other studies have found that subordinates provide more accurate reports of leadership behavior (e.g., Bass & Yammarino, 1991; Furnham & Stringfield, 1994), specifically they have identified strong congruence between self-ratings and subordinate ratings for LE (e.g., Bass & Yammarino, 1991; Brutus, Fleenor, & Tisak, 1999; Furnham & Stringfield, 1994).

However, observational measures have also been subject to criticism, including concerns about raters' ability to accurately perceive and assess some assessment factors such as the effectiveness and performance of their leaders. Fleenor et al. (2010) proposed a behavior-based assessment checklist or rubric to improve the accuracy of performance ratings. This required observers to either use a performance rubric or to record observed behavior throughout a defined assessment period. Multiple assessor approaches can also be used to mitigate potential biases in observers' ratings or assessments (Cavallo, 2000; Dawda & Hart, 2002).

Leadership Effectiveness: Perceived or Actual?

Perceived leadership effectiveness refers to how followers perceive the effectiveness of their leaders based on the proposition that "leadership is very much in the eyes of beholders," and is defined by the "followers, not the leader—and not the researchers" (Meindl, 1995, p. 331). Meindl (1995, p. 331) aptly described leadership as an "emotion-laden" process of influencing others to achieve the desired goals.

Building on Eleanor Rosch's (1978) study of cognitive categorization, researchers (e.g., Lord, Foti, & DeVader, 1984; Lord, Foti, & Phillips, 1982) developed leadership categorization theory to explain the implicit images that followers use to differentiate between leaders and non-leaders. This theory posits that common images of or beliefs about appropriate leadership behavior and actions enable followers to use a consistent set of implicit beliefs to assess leaders. Empirical studies have found that even children have implicit images or schemas of leaders (e.g., Antonakis & Dalgas, 2009). Studies (Eden & Leviatan, 1975, 2005) conducted on adult samples also found implicit leadership theory (ILT) to be a valid theoretical construct to elucidate the social construction of leaders (e.g., Eden & Leviatan, 1975; Schyns, Kiefer, Kerschreiter, & Tymon, 2011; Schyns & Schilling, 2011).

Based on two different samples, Offerman, Kennedy, and Wirtz (1994) found generalizability between undergraduates' and working adults' collective perceptions of leaders.

Actual leadership effectiveness has been defined as a leader's ability to achieve the desired outcome by "influencing and guiding the activities of his or her unit" (Judge, Ilies, Bono, & Gerhardt, 2002, p. 767). Military forces around the world (e.g., the United States [US] Army, Australian Defense Force, and SAF) have defined leadership as a process of inspiring and influencing others, improving the organization, and achieving the assigned mission (Amagoh, 2009; Chan, Soh, & Ramaya 2011; Olivares, Peterson, & Hess, 2007; Yukl, 2006). In essence, "military leaders need to communicate to influence their followers to sacrifice their lives" (Burke, Sims, Lazzara, & Salas, 2007, p. 606) if the need arises.

There is a great deal of empirical evidence for a relationship between emotional intelligence and actual leadership effectiveness (e.g., Austin, 2005; Kerr, Garvin, Heaton, & Boyle, 2006; Rosete & Ciarrochi, 2005). Kobe and colleagues (2001) suggested that the observation of leadership behavior and the use of a behavior-based checklist (Fleenor et al., 2010) to assess objective performance (LE) can mitigate the weaknesses of the self-report approach to measuring EI and leadership performance.

Relationship Between Emotional Intelligence and Leadership Effectiveness

According to both social exchange theory (Gouldner, 1960; Watson & Hewett, 2006) and the symbolic interactionist perspective, leaders and followers are engaged in a complex dyadic relationship that involves a "norm of reciprocity" (Gouldner, 1960, p. 163), that is the obligation to reciprocate (Watson & Hewett, 2006). Leaders with good emotional intelligence skills can engage in meaningful interpersonal interactions with their followers. In return, followers are "obligated" to reciprocate with trust and commitment to maintain equilibrium in these social interactions (Dirks & Skarlicki, 2009). This reciprocal support and positive exchange relationship improves followers' perceptions of their leaders (Watson & Hewett, 2006). In turn, subordinates' perceptions of their leaders shape their decisions about whether to support, obey, or follow a leader (Clapp-Smith, Vogelgesang, & Avey, 2009; Kerr et al., 2006).

Building on previous studies (e.g., Zerbe & Paulhus, 1987), Libbrecht, Lievens, and Schollaert (2010) postulated that self-ratings might be more prone to biased assessment than peer ratings. This finding is consistent with meta-analytic studies on 360-degree performance ratings, where self-ratings biases affected the assessments (Conway & Huffcutt, 1997; Harris & Schaubroeck, 1988). To address this problem, some researchers (e.g., Kolar, Funder, & Colvin, 1996; Ready, Clark, Watson, & Waterhouse, 2000) have argued that peer ratings can

be valuable and reliable sources of information that can be used to supplement or even replace some self-report measures of leaders' personality (Ready, Clark, Watson, & Waterhouse, 2000) and performance.

Kellett, Humphrey, and Sleeth (2006) found that a leader's emotional abilities contributed to followers' perceptions of leader effectiveness. Brackett, Rivers, Shiffman, Lerner, and Salovey (2006) found that social competency, especially in the domains of interpersonal skills, influence team dynamics and leadership perceptions. A correlation study conducted by Mayer, Salovey, and Caruso (2002, p. 396) revealed a positive relationship between EI, followers' perceptions of their leaders' effectiveness, and organizational performance.

Based on this review of previous studies, our first hypothesis is as follows.

H1a. Peer ratings of EI are positively correlated with peer ratings of perceived leadership effectiveness.

Previous studies have found a positive relationship between EI and actual leadership effectiveness (e.g., Austin, 2005; Kerr et al., 2006; Rosete & Ciarrochi, 2005). However, this study's hypothesis mitigates the weaknesses of the self-report approach to measuring EI and leadership performance with a behavior-based checklist (Fleenor et al., 2010) to provide objective performance on leadership effectiveness. As discussed this research also answers the call for more studies on context specific environment (Porter & McLaughlin, 2006).

In a comprehensive quantitative study, McBain (2004) reported that 30 percent of the variance in management performance could be attributed to EI. These findings were supported by a study involving 38 manufacturing supervisors and 1,258 employees, which found a positive correlation between total emotional intelligence and managerial performance ratings (Cote & Miners, 2006). In another study, Rosete and Ciarrochi (2005) found a positive correlation between supervisors' ratings of 41 public service managers' leadership performance and their total emotional intelligence scores on the MSCEIT. A hierarchical regression analysis also found that EI was a significant predictor of the performance effectiveness of these leaders, even when cognitive ability and Big Five personality factors were controlled for. Other studies (e.g., Cote & Miners, 2006; Kerr et al., 2006) have also found positive associations between EI and leadership performance using managerial performances as proxies of leadership effectiveness.

Rosete and Ciarrochi (2005) found that a high EI helped individuals to become leaders or gain promotions to management or executive levels and was a key factor in differentiating their performances. To achieve organizational goals, effective leaders needed

to strike a balance between “what” they deliver in terms of performance and “how” effectively they interact with colleagues and subordinates (Keltner & Haidt, 2001; Rosete & Ciarrochi, 2005). These tasks reflect the two important domains of leadership, initiating structure (or task-focused) and consideration (or relationship oriented), identified by Stodgill, Goode, and Day (1962). Leaders with high EI have been found to be more proficient in the “how” of managing interpersonal relationship, that managing the emotional states of their followers (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006; Elfenbein, 2007; George, 2000).

One limitation of these studies is that most have depended on self-report of EI.

Hence, our second hypothesis asks whether EI as assessed by peers changes the relationship between EI and actual leadership effectiveness.

H1b. Peer ratings of EI are positively correlated with actual leadership effectiveness ratings.

Relationships between Self-Other Agreement (SOA) Ratings on EI and Actual Leadership Effectiveness

SOA ratings are part of a multi-source feedback approach that is widely used in leadership studies (Atwater & Yammarino, 1992; Fleenor et al., 2010; Fletcher & Bailey, 2003; Furnham & Stringfield, 1994). It evaluates the degree of congruence between a leader’s self-ratings and his or her ratings by others, including peers, subordinates, and supervisors (Atwater, Wang, Smither, & Fleenor, 2009; Brutus, Fleenor, & Tisak, 1999; Fleenor et al., 2010; Fleenor, McCauley, & Brutus, 1996; Yammarino & Atwater, 1993). Although there are differing views on the correlations between self and other ratings, it has generally been found that agreements between self and other ratings are good predictors of emotional self-awareness (e.g., Fleenor et al., 2010; Jordan & Ashkanasy, 2006), LE, and leaders’ performance outcomes (e.g., Bass & Yammarino, 1991; Fleenor et al., 2010; Fletcher & Bailey, 2003; Jordan & Ashkanasy, 2006; Law, Wong, & Song, 2004).

In a large-scale study involving 3,217 managers from 527 organizations, Ostroff, Atwater, and Feinberg (2004) found that leaders were not good at judging themselves. Studies suggested that managers’ ratings of themselves are between .5 (Harris & Schanubroeck, 1988) and 1.5 (Atwater & Yammarino, 1992) standard deviations above those made by their supervisors. These studies revealed that individuals might unintentionally skew responses to self-report items due to inaccurate or lack of understanding of emotional intelligence (Cartwright & Pappas, 2008; Day & Carroll, 2004; Wong, Law, & Wong, 2004).

Hence, Lopes, Cote, and Salovey (2006) asserted that self-perceived abilities might not reflect actual EI performance.

Atwater and Yammarino (1992) argued that self-ratings tend to be inflated because people are more lenient than their peers or observers when providing assessments of themselves. Dunning, Heath, and Suls (2004) reported that people tend to overrate their interpersonal skills in dealing with others. This finding was corroborated by Brackett and Mayer (2003), who found that 80 percent of their participants were confident that they had a higher emotional competency than others. Researchers have proposed using self and other ratings as an alternative research design because the agreement between self and other ratings is a good predictor of leadership effectiveness and leaders' performance outcomes (e.g., Bass & Yammarino, 1991; Fleenor et al., 2010; Fletcher & Bailey, 2003; Jordan & Ashkanasy, 2006).

In self and other agreement studies, self-awareness has been defined as the degree of congruity between self and other ratings (e.g., Jordan & Ashkanasy, 2006; Wohlers & London, 1989). Although these studies have elicited inconsistent results, especially between self and other ratings of performance, skills, behavior, or traits (Atwater, Wang, Smither, & Fleenor, 2009), it has been proposed that congruent self and other agreement (SOA) could be used as a proxy for self-awareness, which is also related to the performance of leaders (Atwater & Yammarino 1992) and managers (Atwater, Ostroff, Yammarino, & Fleenor, 1998; Brutus, Fleenor, & Tisak, 1999). Studies of self-awareness have also found that the leadership performance of accurate self-raters was superior to that of their counterparts who gave less accurate self-ratings (e.g., Bass & Yammarino, 1991; Church, 1997). In a series of studies, Atwater and Yammarino, 1992; Bass & Yammarino, 1991) found that congruity between self and other ratings was associated with better performance in leaders. They also found a correlation between transformational leadership and congruence between self and other ratings (Atwater et al., 1998).

The third part of the first hypothesis focuses on the relationships between emotional intelligence and leadership effectiveness.

Hypothesis 1c: Congruence between self and peer ratings on emotional intelligence ratings is positively correlated with ratings of actual leadership effectiveness.

Relationships between Actual and Perceived Leadership Effectiveness

Leadership studies have demonstrated the influence of leaders on followers, but only a few studies (Ehrhart, 2012) have examined the influence of followers on leadership performance. One such study was that of Yukl (1971), in which a discrepancy model was used to explain the congruity between followers' preferences and leaders' actual behavior and its influence on the relationship between leaders and followers.

From a conceptual perspective, self-awareness is defined as an agreement between how individuals see themselves and how others see them (e.g., Wohlers & London, 1989). The SOA method has been found to be a good indicator of emotional self-awareness, that is the accuracy of self-assessment (Fleenor et al., 2010; Jordan & Ashkanasy, 2006), and therefore, has been used as an important and practical leadership development tool (Atwater & Yammarino, 1997; Bass & Yammarino, 1991; Jordan & Ashkanasy, 2006; Van Velsor, Taylor, & Leslie, 1993). For example, a discrepancy between self, peer, and supervisor evaluations enables organizations and individuals to understand the differences between the actual and the desired performance from three perspectives (Brutus, Fleenor, & Tisak, 1999). This multi-source-feedback process provides a more accurate assessment of leadership competency and effectiveness than simple self-assessment.

Given the understanding that leadership is an emotion-laden relationship (Yan & Hunt, 2005) and that followers' perceptions of their leaders are important factors in leadership effectiveness, we investigated the congruity between self and other ratings of actual and perceived LE. This phenomenon has been examined by Lichtenstein and Fishhoff (1977) in their seminal work on the calibration between the quality of subjective assessment and confidence. They raised an important question: "Do those who know more also know more about how much they know?" (Lichtenstein & Fishhoff, 1977, p. 159). To answer this question, researchers have used self and other ratings as a proxy for self-awareness (Atwater & Yammarino, 1992; Brutus, Fleenor, & Tisak, 1999; Sosik & Megerian, 1999). Poor congruity between self and other ratings is a serious problem, because such leaders may continue to make the same mistakes and be unaware of the problems in their leadership competencies. As a result, actual leadership performance may not be improved if leaders over- or under-estimate their task and relational effectiveness (Keltner & Haidt, 2001; Stodgill, Goode, & Day, 1962). Hence, this study extended the findings of previous studies by examining the relationship between self and peer ratings of perceived and actual leadership effectiveness as assessed by supervisors, and whether incongruity between these ratings is associated with low leadership effectiveness in a real-world context.

According to the self-concept-based theory proposed by Shamir, House, and Arthur (1993), followers tend to choose and decide to follow leaders with whom they share values or who align with their identity. Therefore, followers' perceptions of leadership effectiveness can influence team dynamics and performance through the levels of confidence, trust, and support rendered to the focal leaders by the followers. Followers engaged in this exchange relationship subconsciously believe that the leaders are capable, and this shapes their perceptions of their leaders. Dirks and Skarlicki (2009) showed that to maintain equilibrium in their social interactions, followers were "obligated" to reciprocate by showing trust and commitment in their leaders.

Sosik and Megerian (1999) found that leaders with good self-awareness of their leadership competencies were more likely to be perceived as effective by both followers and superiors. Although views differ on the correlation between self and other ratings, the agreement between self and other ratings has generally been found to be a good predictor of LE and leaders' performance outcomes (e.g., Atwater & Yammarino, 1992; Bass & Yammarino, 1991; Fleenor et al., 2010; Fletcher & Bailey, 2003; Law, Wong, & Song, 2004).

Meindl (1995) postulated that the social construction of leadership at the group level was an important research area that warranted more attention. Previous studies (e.g., Clapp-Smith, Vogelgesang, & Avey, 2009) have found that perceived leadership effectiveness greatly influences the initial success and failure of new leaders. Building on Kellett, Humphrey and Sleeth's (2006) hypothesis that a leader's emotional abilities contribute to followers' perceptions of leader effectiveness, other researchers (Burke, Sims, Lazzara, & Salas, 2007) have argued that it is the perceived effectiveness of leaders or trust in them that induces others to follow their leadership unquestioningly. As mentioned above, social exchange theory can be used to explain this complex dynamic between leaders and followers. This theory postulates that the level of support given to a leader is dependent on the followers' perceptions of leadership effectiveness (Atwater & Yammarino, 1992; Clapp-Smith, Vogelgesang, & Avey, 2009, p. 228). Therefore, the perception of LE is another important construct for this study.

Based on this literature review, the following two hypotheses are proposed.

Hypothesis 2a: Peer ratings of perceived leadership effectiveness are positively correlated with actual leadership effectiveness ratings.

Hypothesis 2b: The congruence between self and peer ratings of perceived leadership effectiveness is positively correlated with actual leadership effectiveness as assessed by superiors.

Methods

This study investigated the relationships between self and other ratings of EI and both perceived and actual leadership effectiveness. Figure 1 illustrates the research model.

Insert Figure 1 about here

Quantitative data were collected from the participants using three existing tools: the WLEIS (Wong & Law, 2002), the PLES (Tate, 2008), and the behavior-based leadership assessment rubric. All of the participants were briefed on the purpose, requirements, confidentiality, and voluntary nature of the research. The procedures for ensuring confidentiality such as personalized ID codes, secured data storage, and the independence of this study from course assessment and instructors were explained to them. Written informed consent was obtained and I personally assured the participants that their instructors did not have access to the participants' data.

Participants

The sample population comprised 86 male officer cadets from the Republic of Singapore Air Force (RSAF). The participants had similar educational backgrounds and age range (the average age was 19 to 22, with a standard deviation of 1.5 years). All of the participants had the same length of service and experience (average was 6 months). In terms of qualifications, 98 percent (84 out of 86 cadets) had attained General Cambridge Examination (GCE) 'A' level and the remaining two had a bachelor degree. All of these cadets were selected for the Weapon Systems Officers – Ground Based Air Defense (WSO GBAD) course. The profile of the sample matches the general profile of officer cadets in the Singapore Armed Forces (SAF) given the cohort recruitment policy and National Service liability in Singapore.

These trainees were selected for officer cadet training based on the stringent criteria set by the SAF. In addition to academic achievement (as a proxy for IQ or cognitive ability), two other important criteria were applied during their 3-month basic military training: psychological assessments using situational tests (a proxy for baseline leadership qualities)

and performance (top performers of the cohort). This selection process ensured that the selected cadets had some baseline leadership qualities and cognitive abilities before they were selected for Officer Cadet School (OCS) training.

All of the cadets underwent the same training and appraisal process for their professional competencies, based on the knowledge, skills, and ability (KSA) assessment framework (which includes leadership abilities). This enhanced the reliability of the leadership and professional competencies assessments. To ensure objectivity, a team of three instructors provided leadership effectiveness assessments of the same cadets using the behavior-based leadership assessment rubric.

Measures

WLEIS. The WLEIS is a psychometric measure developed by Wong and Law (2002), comprised 16 items rated on a 7-point Likert-type scale (1=totally disagree to 7=totally agree). Some of the sample questions included “I have a good sense of why I have certain feelings most of the time” to rate emotional self-awareness, or “I always know my friends’ emotions from their behavior” to rate the ability to assess others’ emotions. Previous studies have confirmed that the WLEIS has an acceptable reliability (coefficient alpha=.87) (Wong, Law, & Wong, 2004).

PLES. The PLE self-report survey developed by Tate (2008) was used to measure perceived LE. The PLES used a 5-point Likert-scale (1=totally disagree to 5=totally agree) and had a high reliability coefficient of .94 (Tate, 2008). The three items of the PLES were as follows: 1) This person contributed to the leadership of the group; 2) This person acted as an effective group leader; and 3) I would consider this person to be our group leader.

Behavior-based leadership assessment rubric. All of the participants underwent the behavior-based leadership assessment rubric that the SAF’s LCM uses to assess the six leadership skills (see Table 2) for officer cadets. The assessment rubric was developed by a team of in-house master instructors and validated through several rounds of iteration by other instructors. The master instructors had at least 1.5 years of experience as instructors and were trained in instructional design, including evaluation and assessment, by the National Institute of Education (NIE). This rubric was used to assess cadet’s field leadership and daily administrative competencies. For example, to assess the “Field Leadership Competency,” there were four clearly defined behaviors based on the four stages of operations: 1) reconnaissance, selection, and occupation of a position (RSOP); 2) operation order; 3) approval of plan (AOP); and 4) system deployment. Each behavior was graded based on five levels of competency: 1) novice; 2) advanced beginner; 3) competent; 4) proficient; and 5)

expert. There were detailed descriptors for each level of competency; for example, to be an expert in RSOP, the cadet must be “Able to move to deployment site and conduct local defense. Also able to perform analysis of site in conjunction with mission.” Whereas a novice was only “Able to move to deployment site.” A sample of the detailed checklist can be found in Appendix 1.

Table 1 summarizes the data collection matrix for this study.

Insert Table 1 about here

One key impetus for using objective criteria or measurement tools to evaluate leadership effectiveness in a real-world context was to further enhance the robustness of this study and our understanding of the relationship between self-other agreement on emotional intelligence, perceived leadership effectiveness, and actual leadership effectiveness. Our research design also responded to criticisms (e.g., Lopes, Cote, & Salovey, 2006; Murensky, 2000) of the lack of objective assessments of leadership effectiveness in previous studies. The inclusion in our study of at least three instructors to assess each participant further enhanced the objectivity and accuracy of the leadership assessment.

Experimental procedures

All of the officer cadets received the same traditional lecture-centered leadership training as part of the leadership development course curriculum. The standardized two-day lecture-centered leadership training was conducted by Air Force Training Command’s instructors. The leadership competency model (LCM) stipulated by the SAF for junior leaders during their ab-initio training is comprised of 5 competencies and 14 skills. The junior leadership training phase used as the context of this study involved six of these leadership skills: critical thinking; communicating to influence; planning; decision-making; execution; and self-awareness (see Table 2).

Insert Table 2 about here

The participants were told that the data would be collected over three pre-determined time windows (i.e., 1st, 3rd, and 6th months). At each time window, the participants were given two envelopes containing the WLEIS (Wong & Law, 2002) and the PLES (Tate, 2008), with two different color tags: red for leaders, yellow for followers. They were required to

carry out a leader self-assessment and to rate their peers as leaders using both the WLEIS and PLES.

Given the relationships developed through the two-month common phase of training before they were streamed into the different specializations, and because the officer cadet intake is organized into relatively small cohorts (approximately 40 per batch) for the WSO GBAD, the participants had ample time to get to know their peers. As in other studies (Jordan & Ashkanasy, 2006; Jordan, Ashkanasy, Härtel, & Hooper, 2002), the selected time windows gave the team members the opportunities to work closely during their daily interactions and training, which improved the accuracy of the peer ratings. All of the participants were educated and trained in leadership theories and competencies (Table 1) and were given opportunities to hold leadership appointments as part of the role-playing pedagogy adopted for leadership development. This further reduced measurement error in the perceived leadership effectiveness and emotional intelligence scales. Consistent with the recommendations in Salovey and Grewal (2005), these assessments were conducted in the social context in which the participants were expected to operate, which contributed to the accuracy of the EI and LE measurements.

To ensure confidentiality, the participants were told to place their completed survey forms in sealed envelopes and to drop them into the designated letterboxes placed around the school. All of the information provided was kept by the researcher, and only the personalized ID codes of the participants were indicated on the questionnaires and journals. To eliminate “fear” that their frank ratings might affect their peers’ results and performance for the course, I personally briefed and assured the participants that their submissions (WLEIS and PLES) were not given to the instructors or the school.

Results

Descriptive Statistics

The means, standard deviations, and the self and peer ratings on the WLEIS and perceived leadership effectiveness scales across three-time windows are shown in Table 3.

Insert Table 3 about here

Consistent with other studies, the self-ratings of EI tended to be higher than peer ratings at all three periods (Atwater & Yammarino, 1992; Harris & Schanubroeck, 1988; Libbrecht, Livens, & Schollaert, 2010). In contrast, the peer ratings of perceived leadership effectiveness were higher than the self-ratings at Time 1 and Time 2, although the self-rating of perceived leadership effectiveness became marginally higher (mean=.03) than peer rating at Time 3. The instructor ratings of actual leadership effectiveness using the behavior-based leadership assessment rubric had a mean of 18.7 (maximum total score=20) with a standard deviation of 4.0.

The descriptive statistics, correlations, and Cronbach's alpha were computed using SPSS Version 21. The alpha values for self and peer ratings on the WLEIS and perceived leadership effectiveness across the three time windows are shown in Table 4.

Insert Table 4 about here

The correlation coefficients demonstrated significant relationships between the WLEIS and both self and peer ratings of perceived leadership effectiveness over the three-time windows. There were no significant correlations between the self and peer ratings of perceived leadership effectiveness except at Time 2 ($r=.21, p<.01$). Similarly, the relationship between self-ratings of perceived leadership effectiveness and supervisor ratings of actual leadership effectiveness was not significant. This result is consistent with previous studies (e.g., Atwater & Yammarino, 1992; Hough, Keyes, & Dunnette, 1983).

The results revealed positive correlations between the peer ratings of perceived leadership effectiveness and actual leadership effectiveness assessed by supervisors from Time 2 onwards (see Table 3), providing strong support for the studies (e.g., Epley & Dunning, 2006) showing that peer ratings provide an accurate and useful complementary assessment for supervisors.

Main Analyses

The absolute value of the difference between self and peer ratings was computed to determine whether they were congruent. This difference score was then correlated with the leadership effectiveness ratings. As the EI difference scores and the peer ratings on leadership effectiveness taken during the third time window had a non-normal distribution, non-parametric Kendall's Tau correlations were used to determine the associations between EI congruence and perceived and actual leadership effectiveness.

Hypothesis 1a. The results strongly supported the hypothesis that peer ratings of emotional intelligence were positively correlated with peer ratings for perceived leadership effectiveness. There was a positive correlation between the peer ratings of emotional intelligence and perceived leadership effectiveness across the three-time windows: Time 1, $\tau=.56, p=.001$; Time 2, $\tau=.63, p=.001$; and Time 3, $\tau=.67, p=.001$.

Hypothesis 1b. The hypothesis that peer ratings of emotional intelligence were positively correlated with actual leadership effectiveness ratings was supported. There was a positive association between peer ratings of emotional intelligence and actual leadership effectiveness ratings ($\tau=.17, p=.011$).

Additional analysis also revealed that a higher peer ratings of emotional intelligence averaged across time was associated with a higher peer ratings of perceived leadership effectiveness averaged across time ($\tau=.61, p=.001$).

Hypothesis 1c. The hypothesis that the congruence between self and peer ratings on emotional intelligence was positively correlated with actual leadership effectiveness, as rated by supervisors was supported. There was a significant negative correlation between the absolute difference scores for self and peer ratings of EI and actual leadership effectiveness ratings ($\tau=-.16, p=.016$).

Hypothesis 2a. The hypothesis that peer ratings of perceived leadership effectiveness were positively correlated with actual leadership effectiveness ratings was supported. There was a positive correlation between the peer ratings of perceived leadership effectiveness and the actual leadership effectiveness ratings ($\tau=.28, p=.001$).

Hypothesis 2b. The hypothesis that congruence between perceived leadership effectiveness self and peer ratings was positively correlated with actual leadership effectiveness ratings by the supervisors was not supported. Congruence in perceived leadership effectiveness ratings was not significantly associated with actual leadership effectiveness ratings, as assessed by superiors ($\tau=-.11, p=.070$).

The results supported the first broad hypothesis, that there was significant positive relationships between EI and both perceived and actual leadership effectiveness, as assessed by peers and supervisors, respectively. A positive relationship was also found between perceived leadership effectiveness by peers and actual leadership effectiveness as assessed by the supervisors. The greater the congruence between self and peer ratings of EI, the higher the actual leadership effectiveness. However, there was no significant relationship between the congruity of self and peer ratings of perceived leadership effectiveness, and actual leadership effectiveness as assessed by supervisors.

Discussion

This study's broad research question was as follows: "What are the relationships between EI and both perceived and actual leadership effectiveness?" Five hypotheses were proposed and analyzed using data garnered over a six-month period from self-reports and from peer and supervisor assessments. Overall, the results revealed that EI as a global construct was significantly associated with leadership effectiveness and that EI was positively related to both perceived leadership effectiveness as rated by peers and to actual leadership performance as assessed by supervisors. The results also demonstrated that higher congruence between EI self and peer ratings was associated with actual leadership effectiveness, whereas, congruence between self and peer ratings of perceived leadership effectiveness was not associated with actual leadership effectiveness as assessed by supervisors.

These results suggest that there are positive relationships between peer ratings of EI and both peer and supervisor assessments of leadership effectiveness. This supports social exchange theory, which suggests that leaders with good EI engage in positive interpersonal relationships, which in turn influence followers' perceptions of their leadership effectiveness. The positive relationship between EI and actual leadership effectiveness found in this study has also been reported in many previous studies (e.g., Cote & Miner, 2006; Kerr et al., 2006). Leaders with high EI can achieve a good balance between achieving the task and establishing good working relationships (Keltner & Haidt, 2001).

The results also revealed positive correlations between peer ratings of perceived leadership effectiveness and supervisors' assessments of actual leadership effectiveness from T2 onwards. These findings provide strong support for the previously reported finding (e.g., Epley & Dunning, 2006) that peer ratings are accurate and can be used as a complementary assessments for supervisors. One plausible reason for the non-significant association between peer ratings of perceived leadership effectiveness and actual leadership effectiveness evaluated by supervisors at the first time window (first month) could be that peers must have time to become familiar with each other before they are able to provide an accurate assessment of the focal leaders.

Alternately, the participants may have been educated, trained, and socialized to recognize the behavioral norms and performance expected of leaders by the leadership development training. This is consistent with the implicit leadership theories (Eden & Leviatan, 1975; Eden & Leviatan, 2005), and suggests that the social construction of common

“images” or “beliefs” about appropriate leadership behavior and actions during the training created a common “frame of reference” for the assessment of perceived leadership effectiveness. Hence, the peers needed time to observe and socialize and subsequently to adopt the common images or understand the behavioral norms of good leaders.

The congruity between self and peer ratings of EI and actual leadership effectiveness may be due to the fact that leaders have a better understanding of their emotional abilities and can use this understanding to improve their interpersonal relationships and work performance. Regarding work performance, leaders with good EI can focus on the task instead of engaging in dysfunctional thoughts and behavior during a crisis or stressful situation (Jordan & Ashkanasy, 2006; Jordan, Ashkanasy, & Hartel, 2002; Lambie & Marcel, 2002). This is important and relevant in a military context, as leaders are required to perform under stress, and must be able to focus on functional thoughts and behavior to lead effectively. This insight has implications for self-improvement and for tools for the personal development of individuals and leaders.

Our finding that there is a marginally non-significant relationship between the congruence between self and peer ratings of perceived leadership effectiveness and actual leadership effectiveness as assessed by supervisors may reflect that peers are more accurate raters of leadership performance because of their shared understanding of the behavioral norms for effective leaders. Alternately, this result may be a statistical artifact reflecting the lack of power to detect a small effect size ($r=.2$, Cohen, 1992; Field, 2013). This explanation is supported by the marginal difference between the correlation coefficients of H2a and H2b (H2a: $\tau = -.16$, $p = .016$ vs. H2b: $\tau = -.11$, $p = .070$).

Although this study attempted to mitigate the effects of the social desirability effect (Atwater & Yammarino, 1992), the results showed that self-ratings of EI were higher than peer ratings. This finding is consistent with other studies (Atwater & Yammarino, 1992; Harris & Schanubroeck, 1988; Libbrecht, Livens, & Schollaert, 2010), which also found that individuals were not good judges of their emotional competencies. However, more effective leaders in this study had more congruent self and peer ratings of their EI, perhaps because effective leaders were more aware of their leadership competencies, including EI, and hence were less affected by the social desirability effect.

In general, the results showed that peer ratings of perceived leadership effectiveness and actual leadership effectiveness as assessed by supervisors were correlated, perhaps because the participants had accurate perceptions or images of what constitutes an effective or good leader. An implicit understanding of appropriate leadership behavior is taught,

socialized, and experienced (Eden & Leviatan, 1975; Eden & Leviatan, 2005) throughout the leadership development program in the officer cadet training. Hence, in this study, the peers and supervisors had a common frame of reference for the expected behavioral norms of effective leaders (Kerr et al., 2006; Koh, 2017). As a corollary, the peers' assessments were close to the supervisors' assessments of expected leadership performance.

The assessments provided by the supervisors, who used an objective and contextualized behavior-based leadership assessment rubric to evaluate leadership performance, and by the peer ratings based on perceived leadership effectiveness were consistent. These findings have both theoretical and practical implications for training and education, and for the assessment models used for leadership development. Theoretically, the results suggest that peer appraisal can be used for both leadership development and assessment. From a practical perspective, the sophisticated statistical techniques advocated by researchers such as Fleenor et al. (2010) might be difficult to administer in real-life leadership feedback and development programs. These results suggest that the basic difference-score technique advocated by Atwater and Yammarino (1992) and Jordan and Ashkanasy (2006) can be used as an effective but simple tool to provide feedback to leaders about the gap between their self-ratings and the mean ratings of their peers and supervisors. Fleenor et al. (2010) have argued that accurate self-assessment and self-awareness of one's level of emotional intelligence is important for leadership development and for modifying behavior to meet the expectations of peers, subordinates, and supervisors. Given the impacts of perceived leadership effectiveness on followers, military leaders need to be aware of their abilities and to develop this unseen part of the leadership ability (Dirks & Skarlicki, 2009). This is especially critical in today's VUCA operating environment, where followers' levels of trust and confidence in leaders are key success factors during combat.

Limitations and Future Directions

Although this study addressed most of the limitations reported in previous studies, including using undergraduates working on projects and using perceptual judgments to evaluate leadership effectiveness and team dynamics, it has a few limitations that should be acknowledged. First, as the participants were all males from a relatively narrow age range, a single culture, and with leadership experience in a military context, there is a question whether this study can be generalized to other business organizations. The culture of the military and the nature of training and operations may shape leadership behavior, and specifically, the nature of the study's training and course assessment settings may have

compelled the participants to strive to demonstrate high emotional competencies or self-monitoring, so that they would graduate as officers. Furthermore, these officer cadets were pre-selected with certain baseline criteria in terms of academic qualifications and leadership qualities. Hence, these findings need to be validated or replicated in different cultures and organizational settings and with different participants. Such studies would be timely, given that many of the leadership qualities and organizational cultures practiced in the military are being increasingly adopted by business organizations (Ahlstrom, Lamond, & Ding, 2009;). Examples include leadership competency models (e.g., Budhoo & Spurgeon, 2012; Supamanee, Krairiksh, Singhakhumfu, & Turale, 2011) and balancing between task, relationships, and domains of leadership (Bagheri & Pihie, 2011).

A second limitation is that variables that were not addressed in this study, such as organizational context and culture, may have influenced the relationship between EI and LE. For example, this study was conducted in the context of a leadership training environment; the behavioral norms for leadership, the socialization process, and interactions may be different in a non-training context. However, it must also be noted that the training environment was very realistic in the sense that the “leaders” were required to work under time and context pressures (physical and mentally demanding training scenarios). Similar “simulations of real-world situations” have been used extensively in leadership research (Campbell, Dardis, & Campbell, 2003, p. 36).

A third concern about this study’s research environment and design is the possibility that the participants were conforming to social norms, or the reactance effect, especially in a military setting and leadership school. As mentioned, these potential limitations were mitigated in the research design, which tried to reduce the influence of social norms and the psychological effect of reactance. However, these effects cannot be mitigated entirely. The small sample size is another limitation that influenced the statistical power of this study. Hence, the research design should be replicated in future studies.

Standing on the shoulders of many giants in EI and leadership studies, this study sheds some light on the subtle and complex ramifications of EI for LE. Future studies should examine how EI or a specific domain of EI such as emotional self-awareness interact with other leadership competencies, such as contextual features and norms that define actual or perceived leadership effectiveness in different contexts.

Future studies could also extend the insight that higher EI eventually enhances PLE, which leads to better psychological support and eases leadership transition or succession. This issue could be examined using a longitudinal research design with different measures,

especially in the area of leaders who have to take over new leadership positions or restructured organizations.

Another interesting research question is whether the constructs of EI and PLE should be considered psychological qualities or quantities, or as a complex web of interactions between the emotional, cognitive, and behavioral domains of learning. The answer has profound ramifications for how leadership, leadership development, and EI can be developed, studied and analyzed.

Conclusions

One of the significant contributions of the study is that it examined leadership in a real-world context in which the participants were performing their leadership roles over a six-month period. The study also found that emotional intelligent leaders are most likely to be perceived and assessed to be effective leaders by their peers and supervisors (Clapp-Smith, Vogelgesang, & Avey, 2009; Meindl, 1995). This is important because a shared perception of leadership helps researchers and practitioners to understand the dynamics in group performance and organizational behavior (Kerr et al., 2006, p. 268; Yammarino, Dionne, Chun, & Dansereau, 2005).

In the context of the RSAF or other armed forces, this study is important because the young leaders graduating from Officer Cadet School (OCS) are expected to lead and manage service personnel with different educational backgrounds, ages, and length of service. If there is a relationship between emotional intelligence and perceived or actual leadership effectiveness, then leadership selection, assessment, and development could be more focused, effectively planned, and conducted. This study also strengthens the current assessment framework for peer appraisal of individuals' EI and perceived LE. The findings also suggests that officer cadets could benefit from coaching in EI and perceived leader effectiveness (PLE). Overall, this research contributes to the military leadership training, development, and assessment. Over and above this specific application in the RSAF, the findings could be applied to leadership development in other military or civilian organizations. Some researchers have also proposed providing coaching (Budhoo & Spurgeon, 2012; Wall, 2007) and feedback on emotional intelligence and both perceived and actual leadership effectiveness (Cherniss & Adler, 2001; Fambough & Hart, 2008; Jordan & Ashkansy, 2006) for leadership development.

The findings of this study have significant theoretical implications for our understanding of team dynamics and perceptions of leadership effectiveness. According to the self-concept theory proposed by Shamir, House, and Arthur (1993, p. 588), "followers

may actively choose a leader and decide to follow him or her, based on the extent to which the leader is perceived to represent their values and identities.” This study demonstrates the relationship between EI and PLE, which previous studies have found to be associated with trust, team dynamics, and performance (Bass & Yammarino, 1991; Van Velsor, Taylor, & Leslie 1993).

Contrary to previous findings (Atwater & Yammarino, 1992; Harris & Schaubroeck, 1988; Fleenor et al., 2010; Libbrecht, Livens, & Schollaert, 2010; Ostroff, Atwater, & Feinberg, 2004; Van Velsor, Taylor, & Leslie, 1993; Yammarino & Atwater, 1993, 1997), the tendency for individuals to overrate their effectiveness relative to the perceptions of their peers was not evident in this study, possibly due to its setting. In a military leadership training environment, leaders with high EI were both perceived and assessed as effective leaders by peers and supervisors, respectively.

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Figures and Tables

Figure 1 Pictorial illustration of the research model

Table 1

Data Collection Matrix

Completed by	1st Month	3rd Month	6th Month
Participants	- WLEIS - PLES	- WLEIS - PLES	- WLEIS - PLES
Peers	- WLEIS - PLES	- WLEIS - PLES	- WLEIS - PLES
Instructors			- End-of-course results, including leadership effectiveness assessment.

Table 2

The SAF's Leadership Competency Model

Competencies	Core Competencies (for performance)				'Meta-Competency' (for growth/adaptability)
	Conceptual Thinking	Social	Mission	Development	Self
Skills	*Critical Thinking	*Communicating to Influence	*Planning	Developing People	*Self-Awareness
	Creative Thinking	Interpersonal Effectiveness	*Decision-Making	Developing Team	Self- Management
	Ethical Reasoning		*Execution	Improving Organisation	Personal Mastery

Note. The skills with asterisks and highlighted in light blue were to be developed during officer cadet training.

Table 3

Means and Standard Deviations, (N=86) of Self and Peer Ratings on the WLEIS and Leadership Effectiveness across Three Time Windows

	Measurement Tools	M	SD
1	Self T1 EI	5.71	.58
2	PLE	5.09	.99
3	Self T2 EI	6.04	.50
4	PLE	5.73	.80
5	Self T3 EI	6.17	.44
6	PLE	5.98	.62
7	Peer T1 EI	5.43	.34
8	PLE	5.13	.60
9	Peer T2 EI	5.92	.36
10	PLE	5.78	.51
11	Peer T3 EI	6.03	.45
12	PLE	5.98	.64
13	ALE	18.7	4.0

Note: $n=86$, EI = Emotional Intelligence, T = Time Window, PLE = Perceived Leadership Effectiveness, ALE = Actual Leadership Effectiveness (Supervisors).

Table 4

Means, Standard Deviations, Correlations and Cronbach's Alphas (N=86) of Self and Peer Ratings on the WLEIS and perceived leadership effectiveness across Three Time Windows

Scale	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Self T1 EI	5.71	.58	(.87)												
2 PLE	5.09	.99	.55**	(.94)											
3 Self T2 EI	6.04	.50	.24**	.11	(.91)										
4 PLE	5.73	.80	.26**	.26**	.53**	(.92)									
5 Self T3 EI	6.17	.44	.13	.02	.49**	.42**	(.93)								
6 PLE	5.98	.62	.15	.09	.26**	.39**	.49**	(.93)							
7 Peer T1 EI	5.43	.34	.10	.03	-.09	-.06	-.06	-.12	(.93)						
8 PLE	5.13	.60	.11	-.07	-.15*	-.07	-.15*	-.13	.56**	(.98)					
9 Peer T2 EI	5.92	.36	.01	-.05	.25**	.27**	.24**	.17*	.18*	.09	(.97)				
10 PLE	5.78	.51	.03	.05	.11	.21**	.11	.11	.18*	.26**	.63**	(.98)			
11 Peer T3 EI	6.03	.45	-.04	-.10	.16*	.21**	.16*	.10	.17*	.11	.73**	.58**	(.98)		
12 PLE	5.95	.62	-.03	-.03	.03	.18*	.05	.08	.13	.18*	.43**	.62**	.67**	(.98)	
13 ALE	18.7	4.0	-.02	-.07	.07	.09	.07	.09	.10	.06	.43**	.45**	.57**	.52**	-

Note: n=86, EI= Emotional Intelligence, T= Time Window, PLE= Perceived Leadership Effectiveness, ALE= Actual Leadership Effectiveness assessed by supervisors.

* $p < .05$ (2-tailed)

** $p < .01$ (2-tailed)