THE ROLE OF EMOTIONAL INTELLIGENCE IN LEADERSHIP EFFECTIVENESS: A META-ANALYSIS

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Ashleigh D. Farrar
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Abstract

Leaders are an essential element of the business world. While good leaders can provide many benefits for an organization, unsuccessful leaders can be detrimental. The notion that emotional intelligence plays a part in whether a leader is effective or not effective has recently been introduced. This study sought to unify the literature evaluating the possible link between emotional intelligence and leadership effectiveness. Meta-analytic techniques were used to analyze this relationship. Results revealed that overall, there is a positive relationship between emotional intelligence and leadership effectiveness. Also, while the type of emotional intelligence measure used served as a moderator to this relationship, a second and third meta-analysis supported the overall positive relationship of emotional intelligence and leadership effectiveness.

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Great responsibility comes with each leadership role. For this reason and others, leaders should be chosen wisely. Organizations have been obsessed with the idea of pinpointing specific traits or characteristics that can predict an effective leader (Kets de Vries, 1993; Higgs, 2002; Parry & Meindl, 2002). Because organizations can ultimately succeed or fail due to their leaders, a large amount of research has been devoted to this. Brown and Moshavi (2005) explained that organizations and scientists alike want to find the "X" factor of leadership. However, psychologists are still not certain whether there is one factor that may determine whether a leader succeeds or fails.

With the growth of today's service-oriented businesses, leaders are not just expected to manage, but to also lead with a sensitive aspect (Hogan et al., 1994). With these new types of demands, organizations and scientists are even more determined to find a successful selection method to choose leaders. One idea that has emerged recently is that emotional intelligence may play a part in why a leader succeeds or fails.

The goal of this study is to examine the possible relationship between emotional intelligence and leadership effectiveness. To better understand the constructs, a history and some current views on leadership are discussed. The various emotional intelligence theories and measures are then discussed. Finally, the meta-analytic procedures and results are reported.

The topic of leadership is complex. One important aspect to examine while studying the effectiveness of leaders is the set of characteristics of today's leaders.

Dulewicz and Higgs (2003) claim that the need for effective leadership has become paramount in this growing age of the 21st century. Changes in the business environment, including globalization of markets, advances in technology, and an impending labor shortage make the selection of leaders a crucial task (Harris & Kuhnert, 2007).

In addition to these changes in business, recent concepts of leadership have incorporated people skills issues. Dearborn (2002) stated that current leaders are expected to motivate, engage, and retain employees. Fostering positive attitudes and creating a sense of contribution and importance are all added to the task list of a contemporary leader (Hogan et al., 1994; Palmer et al., 2001). It seems as though leaders are constantly being faced with new challenges, and a successful leader in today's organization must be able to adapt to these developing issues.

Despite decades of leadership research, no clear-cut conclusions have been reached about the specific personal characteristics that constitute an effective leader.

Leadership

Many researchers have made attempts to define leadership and the factors that determine a good leader. One of the first approaches to explaining leadership potential was based on individual characteristics. Trait theory examined specific characteristics that were thought to be predictors of effective leaders (Chemers, 2000; Stogdill, 1948). Traits such as dominance, assertiveness, intelligence, physical stature, and social sensitivity were some noted traits that were thought to determine whether an individual was best suited for leadership or followership (Chemers, 2000).

However, Stogdill noted that while some key characteristics were advantageous to leaders, there was no one characteristic or cluster of characteristics that consistently correlated with leadership in all situations (Chemers, 2000; Stogdill, 1948). The trait theory was most prominent between 1930 and 1950, and eventually lost popularity with a shift of focus to other theories attempting to explain the phenomenon of the successful leader (Duckett & Macfarlane, 2003).

Leadership theorists soon adopted a behavioral approach, which suggested that there are patterns of leader behaviors associated with high productivity or good morale (Chemers, 2000). Unlike the trait theory that stated that good leaders are born, the behavioral approach advanced the notion that good leaders may be taught or trained to be effective (Horner, 1997; Saal & Knight, 1988). Research using the behavioral approach also helped in broadening the idea of leadership from only task-oriented responsibilities to also people-oriented responsibilities (Horner, 1997).

During the mid-1960s, leadership researchers explored a more complex representation leader effectiveness (Chemers, 2000). This approach was based on a contingency model that encompassed leader traits, leader behaviors, and the situation in which the leader works (Horner, 1997). According to such a contingency model, effective leader performance will result when there is a match between the leader's personality (including goals, needs, and motivation) and the leader's situational control (including leader-member relations, task structure, and position power) (Fiedler & Mahar, 1979).

Currently, there are still no generally accepted definitions of what leadership is, and little agreement about how organizations should develop or exercise it (Hackman & Wageman, 2007). However, while other leadership theories are still utilized (e.g., least preferred coworker theory, path-goal theory, normative decision theory), the transactional and transformational theory has been generating substantial interest. Judge and Piccolo (2004) note that in the past 20 years, a large amount of research has accumulated on this theory of leadership. Burns coined the terms transactional and transformational to describe two particular styles of leadership (Brown & Moshavi, 2005; Higgs, 2002; Dulewicz & Higgs, 2003). A transactional style of leadership involves the exchange between two parties: the superior and the subordinate (Humphreys & Einstein, 2003). Transactional leaders are in a sense, more traditional, and use their position of power to influence subordinates to do whatever the job entails (Burns, 1978; Horner, 1997). The other style, transformational leadership, is thought to be associated with charisma, inspiration, intellectual stimulation, and individual consideration (Bass, 1985; Humphreys & Einstein, 2003).

Transformational leaders want to seek new ways of doing things, and strive for effectiveness instead of efficiency (Lowe & Kroeck, 1996; Gardner & Stough, 2002). While both transformational and transactional leaders are concerned with goals and objectives, transformational leaders also aim to motivate, arouse awareness and interest, and build confidence in subordinates to achieve the best results (Gardner & Stough, 2002). Research suggests that transformational leadership is associated with higher effort and performance among subordinates and higher effectiveness among superiors (House et al., 1988; George, 2000; Sosik & Megerian, 1999), and is

consistently found to be a more effective leadership style than transactional leadership (Lowe & Kroeck, 1996). In a meta-analytic test of the validity of transformational and transactional leadership, Judge and Piccolo (2004) found that transformational leadership has relatively high levels of validity and seems to generalize across many situations.

While the theory of transformational leadership focuses on leader and follower interactions, scientists have begun to revisit the idea that an effective leader may be determined by a capability (Brown & Moshavi, 2005). One idea that has come into its own in recent years is that emotional intelligence may play a part in the effectiveness of leaders.

Emotional Intelligence

Emotional intelligence (EI) is a rather new concept in the psychology world. As such, there is still much debate about the definition, application, and measurement of EI (Spector, 2005). Attempts to define EI in have varied, from suggesting it reflects a distinct group of mental abilities to a mix of positive personality traits. Also, because of the novelty of this construct, some researchers have used the term too broadly, adding to this lack of clarity concerning EI. However, psychological literature focused on EI and the understanding of this theory continues to grow (Mayer, Salovey, & Caruso, 2008).

Gardner may be responsible for introducing the original idea of an emotional intelligence. He suggested that intelligence, viewed before as only consisting of one factor, is actually comprised of several factors independent of one another (Gardner,

1983). Interpersonal intelligence was said to be the ability to notice and make distinctions concerning the intentions, motivations, and desires of others, while intrapersonal intelligence involved the internal aspects of a person (Gardner, 1983). Researchers built upon this idea to develop what is now known as EI.

The first to actually publish the phrase "emotional intelligence" was Salovey and Mayer in 1990. They defined EI as the "ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action" (Salovey & Mayer, 1990). These researchers classified EI in terms of four key abilities: perceiving emotion, using emotion to facilitate thought, understanding emotion, and managing emotion (Mayer & Salovey, 1993). This ability model conceptualizes EI in a way that is similar to cognitive intelligence. EI is assumed to develop over time, be correlated with measures of IQ, and be measureable with a test based on performance (Ciarrochi et al., 2000).

Reuven Bar-On viewed emotional intelligence as a construct somewhat differently than Mayer and Salovey. Bar-On described EI as a collection of non-cognitive variables that "resemble personality factors." (Bar-On, 1997). His definition states that emotional intelligence is the "aspect of human intelligence that governs our ability to recognize, understand, control and use emotions in solving problems of a personal and interpersonal nature" (Bar-On, 2007). Bar-On's model is based on 15 conceptual components that pertain to five specific dimensions of EI. They are intrapersonal EI, interpersonal EI, EI, stress management EI, and general mood EI (Bar-On, 2007). Similar to Mayer and Salovey's model, Bar-On suggests

that emotional intelligence can develop and change over time through training (Bar-On, 1997).

Following Gardner and Salovey and Mayer, Goleman proposed The Emotional and Social Competencies Model. (Goleman & Boyatzis, 2009). Because Goleman's model is a competency model, he suggests that emotional intelligence can be compared to a competency, or job skill. He thought of EI as something that could be learned (Goleman, 2001). Similar to the Mayer and Salovey model, Goleman's model included four main constructs: self-awareness, self-management, social awareness, and relationship management (Goleman, 2001).

While EI theory is similar to leadership theory in that it has had many contributors and has been defined in many ways, it is disparate in that EI is still a young theory. EI is at an early stage of development and is still in a hypothesis-testing stage, making it hard to pinpoint any one claim that is more accurate or that is more accepted among researchers (Cherniss, Extein, Goleman, & Weissberg, 2006). Confusion has resulted in the literature about what constitutes emotional intelligence, the terminology that should be used, and also the methods that are being used to measure EI (Dulewicz & Higgs, 2003). A low level of agreement across the EI perspectives has resulted in a large number of measures (McEnrue, M. P., Groves, K., 2006). Some of the most frequently used tests have come from Mayer and Salovey, Bar-On, and Goleman (McEnrue & Groves, 2006).

Measures of Emotional Intelligence

One of the most widely used measures of EI is the Mayer-Salovey-Caruso-

Emotional Intelligence Test, also know as the MSCEIT, which measures EI by using problem solving questions about emotions. The test consists of 141 items that provide 15 scores: total score, two area scores, four branch scores and eight task scores. (Mayer *et al.*, 2003) Responses on the MSCEIT are scored by comparing answers with answers given by emotion experts or a normative sample of the general population. This style of scoring is similar to that used for some classic intelligence tests (Mayer, Salovey, & Caruso, 2008).

The Emotional Quotient Inventory, or EQI, which is a self-report measure has one hundred and thirty three items that all relate to the five dimensions of the model by Bar-On (Bar-On, 1997). And there are two measures developed based on Goleman's model, which are the Emotional Competency Inventory, (ECI), (Boyatzis *et al.*, 2000) and the Emotional Intelligence Appraisal (Bradberry & Greaves, 2005).

In addition to the models by Mayer and Salovey, Bar-On, and Goleman, a myriad of EI measures have been developed. The information regarding the validity or lack of validity and use of these measures has been spread out over articles, books, technical reports, and unpublished papers, making the comparison among measures almost impossible (McEnrue & Groves, 2006). However, two distinct models have emerged over the last decade. These models are an "ability model" and a "mixed model." The ability model is largely based on the work of Mayer and Salovey, and links EI to a cognitive intelligence. The mixed model is largely based on the work of Bar-On, and combines traits with social behaviors and competencies (Brown, Bryant, & Reilly, 2006). There are strong advocates of both models. However, thus far

neither model has had success in proving its superiority to the other, resulting in current studies using an assortment of methods to measure EI (Brown et al., 2006).

The Present Study

Using one or more of these specific models and/or measures of EI, researchers have explored the possible link of EI to leader effectiveness. While there is an increasing interest in this relationship of EI to leader effectiveness, there is a limited amount of empirical research that substantiates the efficacy of emotional intelligence in these areas (Palmer, *et al.*, 2001). Consequently, the present study will attempt to combine and analyze prior studies on the relationship of EI to leader effectiveness by using meta-analytic techniques. The central hypothesis to the present study is that EI will be positively related to leader effectiveness.

Because EI is generally measured using either the ability model or the mixed model, there will be two additional independent hypotheses for each of the EI models. It is suspected that the measure used in each study may serve as a moderator, and splitting the studies into subsets may eliminate the possible moderator of the EI and leadership effectiveness relationship. Also, the term leadership effectiveness will encompass transformational leadership, as prior studies have found transformational leadership to be consistently effective in the workplace (Lowe & Kroeck, 1996). Therefore, it is expected that EI will be positively related to transformational leadership style, as well as being positively related to effective leadership.

H1: EI will be positively related to leadership effectiveness.

H1a: EI, as measured using an ability model measure, will be positively related to leadership effectiveness.

H1b: EI, as measured using a mixed model measure, will be positively related to leadership effectiveness.

Method

Literature Search

To locate appropriate articles for inclusion in this meta-analysis, various article databases were searched. These databases included, but were not limited to, *PsychInfo*, *ABI/Inform*, *Academic OneFile*, *OmniFile Full Text Mega Edition*, and *Education: SAGE full text.* Searches were not limited to any specific dates. However, most of the literature has been published within the last twenty years due to the recently developing interest in EI as a construct. A manual search was conducted on the references of the articles obtained electronically.

Keywords

Specific keywords were used to search databases for articles to be included in the meta-analysis. These keywords include: emotional intelligence, leadership, leadership effectiveness, transformational leader, transformational leadership, effective leadership, and effective leader.

Inclusion Criteria

To be included, a study had to have investigated EI based on one or more of the definitions given above. It also needed to explore the relationship of EI to either leader effectiveness or transformational leadership. No studies were excluded based

on demographic characteristics or the origin of the study. All study settings (universities, work organizations, etc.) were included. Peer-reviewed articles, as well as dissertation and theses works were also included. A total of 20 studies (see Appendix A) met the inclusion criteria and were included in the analyses that follow. Studies that were included are noted in the Reference section with an asterisk.

Coding of the Studies

Studies were coded based on correlations of EI and leadership effectiveness. Sample size was included for each study. Studies were also coded based on predictor measures, or measures of EI, and criterion measures, or measures of leadership effectiveness. The reliability coefficients of both predictor and criterion measures were included when reported.

Meta-Analytic Procedures

The Hunter and Schmidt Version 1.1 (2005) Meta-Analysis Program was used to analyze correlations collected from the 20 identified studies. Because sample size varied within each of these studies, a weighted effect size was calculated for all studies.

The Correlations-Using Artifact Distributions method was chosen because information about statistical artifacts was not available in every study included. Specifically, reliabilities for measures used to compute correlations were not always reported, and therefore, study effect sizes could not be corrected individually for measurement error (Hunter & Schmidt, 2003).

Based on the type of data and also the scale of the variables for the correlations within the studies, range restriction did not pose an issue, and there was no correction for sample range.

Results

The central aim of the present study was to examine the overall relationship of EI and leadership effectiveness. The initial meta-analysis was conducted using all of the included studies. The results of this meta-analysis are provided in Table 1. A total of 20 correlations were used from 20 studies, with a total sample size of 3,295. After correcting for unreliability in both EI and leadership effectiveness measures, the sample-size-weighted mean rho linking the constructs was .458. The 80% credibility interval did not include zero, indicating that there was a relationship between EI and leadership effectiveness. These results supported Hypothesis 1.

Table 1:

All Studies

N	20
Total Sample Sz.	3295
Mean Rho	0.457
Variance of Rho	0.028
80% Credibilitiy	.24-.67

In spite of the fact that the credibility interval did not include zero, the size of the 80% credibility interval (.24-.67) suggested that moderator variables may be influencing these results. A Q statistic was computed to test the homogeneity of the distribution. The Q value was 148.27, with 19 degrees of freedom, at ($p < .001$). This led to the rejection of the hypothesis of homogeneity, suggesting that variables other

than sampling error may have affected the correlations of EI and leadership effectiveness.

After establishing that moderator variables were operating, it was decided that differences in correlations associated with the type of EI measure used in each study may have lead to the high Q statistic. Studies were divided into one of two categories: EI Ability Model Measures or EI Mixed Model Measures. Two additional meta-analyses were conducted. Results of the EI Mixed Model Measures and EI Ability Model Measures meta-analyses are presented in Table 2 and Table 3.

Table 2:
EI Mixed Model Measures

N	12
Total Sample Sz.	2265
Mean Rho	0.427
Variance of Rho	0.030
80% Credibility	.20-.65

Table 3:
EI Ability Model Measures

N	8
Total Sample Sz.	1030
Mean Rho	0.536
Variance of Rho	0.013
80% Credibility	.39-.68

The EI Mixed Model Measure meta-analysis was based on 12 total correlations and a total sample size of 2,265. A significant positive relationship was found linking EI to leadership effectiveness when all correlations were combined. The combined mean rho was .427. The observed variance of the distribution of

effects, or variance of rho, was .031, demonstrating that moderators may still exist. A Q statistic was computed for the EI Mixed Model Measures meta-analysis resulting in a value of 103.33 with 11 degrees of freedom, ($p < .001$). This value lead to the rejection of the homogeneity hypothesis.

The Ability Model Measures meta-analysis was based on 8 correlations with a total sample size of 1,030. A significant positive relationship among EI and leadership effectiveness was also found in the Ability Model Measures meta-analysis. The overall mean rho was .536, which was higher than the EI Mixed Model Measures meta-analysis. The variance of rho for this meta-analysis was also nonzero, at .014. A Q statistic for the Ability Model Measures meta-analysis was computed. A Q value of 27.37, with 7 degrees of freedom, ($p < .001$) was found. The hypothesis of homogeneity was rejected for this subgroup also.

A Z test was computed to determine if the Mixed Model Measures group and the Ability Model Measures group were significantly different. The Z test value was 5.45, indicating that mean values of rho of the two subgroups were significantly different. While both measures provided positive results, they measure EI differently.

The Q values of both subgroup meta-analyses suggested the presence of moderator variables other than the variables already corrected for in this study. However, the decision to not conduct further meta-analyses was made because of the small number of studies in each group.

Discussion

Effective leadership has long been the focus of researchers. Only recently, emotional intelligence has been linked to effective leadership. While the available research is still limited, the topic of a possible relationship of emotional intelligence and leadership effectiveness seems to be gaining momentum. The present meta-analysis of the literature was done under the assumption that there is a positive relationship between EI and leadership effectiveness.

Hypothesis 1 was supported, indicating that there is indeed, a positive relationship between EI and leadership effectiveness regardless of the nature of the measure used for EI or leadership effectiveness. Because definitions and theories of both EI and leadership effectiveness still vary greatly in the literature, these results should be considered exploratory in nature. However, these results do suggest that the specifics of EI and leadership effectiveness measurements are not crucial.

Hypotheses 2 and 3 were also supported, indicating that a positive relationship between EI and leadership effectiveness exists for both the ability model measures and for the mixed model measures of EI.

These results build upon a meta-analysis conducted by Martin (2008) that also investigated the relationship of EI and leadership effectiveness. While both the present study and the study by Martin resulted in support for the positive relationship of EI and leadership effectiveness, the method of reaching those conclusions differed. Specifically, the present study controlled for measurement error in addition to sampling error, whereas the meta-analysis by Martin only corrected for sampling

error. The present study also added to the previous meta-analysis by examining the potential EI measure moderator in the subset meta-analyses that were conducted. The results suggest that a variety of measures of EI will be positively related to leadership effectiveness. While, at face value, the number of different measures of EI would seem to only decrease the reliability and validity of the research, this study suggests that any EI measure will positively predict leadership effectiveness.

While the present study has added to the literature, it also suggests further research of EI and leadership effectiveness is warranted. Because moderators were detected affecting the relationship of EI and leadership effectiveness, a clearer understanding of this relationship is needed.

One potential moderator is the outcome measure used. While the present study attempted to control the potential moderator of EI measure used, it did not examine the potential moderator of leadership effectiveness measure used. Future research may want to look at this relationship with respect to the diversity of measures of leadership effectiveness.

Another possible moderator is the type of organization and type of work setting in which the studies were conducted. Brown et. al mentions that it cannot be ruled out that results may be influenced by the cultural or organizational circumstances. Some of the settings studies utilized in the present meta-analysis included a restaurant franchise, a manufacturing plant, a local government office, and a retail organization. It is not known that EI is generalizable across any type of work

setting, and future research may want to examine the type of work as a potential moderator on the EI and leadership effectiveness relationship.

A primary limitation of this study is the small number of available studies used in the meta-analysis. Because the interest in this particular topic is rather recent, the studies were somewhat scarce. This scarcity also did not allow for quality control of the studies. Future research may want to take caution in the inclusion of studies to better control for quality.

Another general limitation that potentially affects meta-analyses is the *file drawer problem* (Rosenthal, 1995). This problem refers to the well-supported idea that because studies that have achieved statistical significance are more likely to be published, the studies sampled are not truly random. Studies that were not significant may still remain in file drawers and not available to the researcher conducting a meta-analysis. This potential problem can affect the research conclusion (Rosenthal, 1995).

Practical implications for these results include the idea that EI is a fairly good predictor of leadership effectiveness. While leaders were once only expected to meet business goals, it seems that today's effective leader may also increase the likelihood of his or her success by being emotionally intelligent. EI is still a young theory, and still in development, as can be seen in the varied EI measures in use. However, this study has suggested that any EI measure may suffice in predicting leadership effectiveness.

Organizations cannot ignore the importance of selection and detection of successful leaders. A better understanding of why leaders are, or are not effective, is

crucial to organizations. The selection of leaders may also affect other aspects of an organization, such as employee job satisfaction, job performance, attendance, turnover, etc. Future selection, and development of current leaders or managers, may want to consider EI as a critical success factor.

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APPENDIX A: Table of All Included Studies

Document	EI Measure Used	Leader Measure Used	N	R of EI	R of L	*r*
Barbuto, J., Burbach, M.	Carson et al. EI measure	Multifactor Leadership Questionnaire	80	0.91	0.74	0.20
Barling, J., Slater, F., Kelloway, E. K.	Emotional Quotient Inventory	Multifactor Leadership Questionnaire	49	0.89	0.74	0.38
Brown, F.W., Bryant, S., Reilly, M.	Emotional Quotient Inventory	Multifactor Leadership Q. -modified	161	0.89	n/a	-0.02
Carmeli, A.	Schutte et al. Scale	Pearce and Porter Scale	98	0.90	0.87	0.32
Downey, L.A., Papageorgiou, V., Stough, C.	TMMS	Multifactor Leadership Questionnaire-5X Short	176	0.85	0.84	0.33
Dulewicz, C., Young, M., Dulewicz, V.	Leadership Dimension Quest.	Leadership Dimension Questionnaire	261	n/a	n/a	0.21
Dulewicz, V., Higgs, M., Slaski, M.	EIQ by Dulewicz and Higgs	Critical Success Factor Model-Custom	53	0.77	0.76	0.32
Gardner, L., Stough, C.	Swinburne U. EI Test	Multifactor Leadership Questionnaire Form 5x	110	0.88	0.84	0.68
Higgs, M., Aitken, P.	EI Questionnaire-Managerial	Overall Assessment Rating (in a center)	40	0.64	n/a	0.19
Kerr, R., Garvin, J., Heaton, N., Boyle, E.	MSCEIT (Mayer & Salovey)	Tailor made Survey	38	0.86	0.97	0.39
Leban, W., Zulauf, C.	MSCEIT (Mayer & Salovey)	Multifactor Leadership Questionnaire	24	0.86	0.84	0.37
Mandell, B., Pherwani, S.	Emotional Quotient Inventory	Multifactor Leadership Questionnaire 5x Revised	32	0.89	0.59	0.50
Palmer, B., Walls, M., Burgess, Z., Stough, C.	Trait Meta Mood Scale-Modified	Multifactor Leadership Questionnaire	43	0.73	0.84	0.20
Rahim, M. A., Psenicka, C.	Made Their Own	Tsui subscale from McCall and Sergist	1182	0.81	0.88	0.48
Rosete, D., Ciarrochi, J.	MSCEIT (Mayer & Salovey)	Assessment and 360 degree feedback	41	0.86	0.93	0.38
Samad, S.	Schutte et al. Scale	Kouzes and Posner	500	0.86	0.89	0.53
Sivanathan, N., Fekken, G. C.	Emotional Quotient Inventory	Multifactor Leadership Questionnaire	58	0.89	0.84	0.40
Slaski, M., Cartwright, S.	EQI	Management Performance	224	0.89	n/a	0.22
Sosik, J.J., Megerian, L.E.	Took Parts from Many Measures	Multifactor Leadership Questionnaire Form 5x	63	0.72	0.87	0.15
Sy, T., Tram, S., O'Hara, L.	Wong and Law EI Scale	Job Satisfaction and Performance	62	0.88	0.88	0.18