DIAGNOSING EMPLOYEES' EMOTIONAL INTELLIGENCE IN THE IT/ITES SECTOR OF SOUTH INDIA

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Abstract. The Indian IT/ITES industry has made a significant contribution to the country's economic growth. The innate nature of the work environment of this industry has a considerable impact on the health of its employees and poses many emotional challenges to them. It is in this context that this study aims to diagnose the Emotional Intelligence levels of the IT/ITES employees. The study developed a tool specific to India, to measure the Emotional Intelligence of individuals in the work environment. The study involved 533 respondents of the sector in South India. It found that the IT/ITES work force has high emotional intelligence and that gender and age have an impact on Emotional Intelligence. It also outlines the immense scope for further research, paving way for its creative use in the IT/ITES sector of India.

The Indian IT/ITES industry has made a significant contribution to the country's economic growth in terms of Gross Domestic Product (GDP), foreign exchange earnings, and employment generation. This industry has placed our country in an advantageous position in the eye of foreign investors and has taken Indian excellence to the global market (NASSCOM, 2008). However, a bitter truth is that we are getting all these benefits at the cost of a generation's well-being.

The innate nature of the work environment of the IT/ITES industry has a considerable impact on the health of IT and ITES employees. About 30 to 40 per cent of the patients coming to psychiatrists are from the IT/ITES sector for problems of depression and stress disorders (Charan, 2007). In another survey (XLRI, 2009), 67 per cent of the IT/ITES employees reported headache; 53 per cent had physical symptoms of stress; 43 per cent had digestive upsets and restlessness; 27 per cent started to use drugs, alcohol and tobacco; 73 per cent experienced irritability; 67 per cent had mood swings; and 60 per cent had bad temper. Since IT professionals are more achievement oriented, they do not have much of a social life and the time spent with family is also less. There is also lack of recreation and opportunities to relax (Charan, 2007), due to which they end up in physical and mental illness.

All the challenges outlined thus far have a significant relation with emotions and their management. Earlier, emotions were considered as disorganized responses and were ignored by psychologists and behaviorists. In this millennium, psychologists argue that emotions of all sorts are potentially contributing to thoughts (cognition), rather than disorganizing them. This change in the perspective on emotions, inspired John D. Mayer and Peter Salovey to coin the buzzword called Emotional Intelligence (EI). It was popularized with respect to the organizational context by Daniel Goleman in 1998, which resulted in EI being used as a new yard stick for recruiting and developing employees in many organizations in the west. This yardstick takes for granted that the work force has enough technical and intellectual abilities to do their job and focuses on their emotion related skills. It predicts who is most likely to become a star performer and who is most prone to derailing (Krishnaveni & Deepa, 2008).

EI has a significant impact on the personal and professional success of individuals and is seen as a powerful tool to improve the efficiency of employees and foster a healthy work culture. It has been empirically proven that EI impacts the performance and well-being characteristics of individuals and teams, and facilitates organizational effectiveness and competitive advantage (Krishnaveni & Deepa, 2010). EI has an impact on individual well-being (Lenaghan, Buda, & Eisner 2007), stress tolerance (Chapman & Clarke 2003; Dulewicz, Higgs, & Slaski 2003; Nikolaou & Tsaousis 2002; Lopes, Grewal, Kadis, Gall, & Salovey 2006), leadership qualities (Rosete & Ciarrochi 2005), organizational commitment (Nikolaou & Tsaousis 2002; Carmeli 2003), performance (Shaffer, Hom Hung, Hong Kong, & Shaffer 2005; Dulewicz, Higgs, & Slaski 2003; Lam & Kirby 2002; Lopes et al 2006), work-family balance (Lenaghan et al 2007; Carmeli 2003), team cohesiveness (Rapisarda 2002), cultural adjustments (Gabel, Dolan, & Cerdin 2005), change management (Chrusciel 2006), organizational citizenship behavior (Carson, Carson, Fontenot, & Burdin 2005), entrepreneurial qualities (Cross & Travaglione 2003), conflict management (Rahim 2002; Morrison 2005; Malek 2000), transformational leadership (Hartsfield 2003; Palmer, Walls, Burgess, & Stough 2001), sales performance (Bryant 2005; Chipain 2003), social skills (Schutte, Malouff, Bobik, Coston, Gresson, Jedlicka, Rhodes, & Wendorf 2001; Lopes, Brackett, Nezlek, Schutz, Sellin, & Salovey 2004; Lopes, Salovey, Cote, & Beers 2005), marital relationships (Schutte et al 2001; Brackett, Warner, & Bosco 2005), academic achievement (Mestre, Guil, Lopes, Salovey, & Gil-olarte 2006), depression (Goldernberg, Matheson, & Mantler 2006), coping skills (Goldenberg et al 2006), and organizational learning (Singh 2003).

Based on the significant impact of EI on the personal and professional lives of individuals, this study aims to diagnose the EI level of the employees of the IT/ITES sector of South India. This will pave way for the creative use of EI in improving the contributions of this sector to the national economy. The future scope of research in this arena is also brought out by us in our discussion. In order to arrive at a framework for diagnosing EI, we reviewed the various perspectives on EI and its measurement.

FRAMEWORK FOR THE STUDY

The research on EI has proliferated in the last three decades resulting in various conceptualizations (Salovey & Mayer, 1990; Petrides & Furnham, 2000; Weisinger, 2005; Steiner, 2005; Singh, 2006; Bhattacharya & Sengupta, 2007) and measures (Bar-On, 2006; Boyatzis, 2007; Mayer, Salovey, & Caruso, 2002; Petrides & Furnham, 2003; Schutte, Malouff, Hall, Haggerty, Cooper, & Golden, 1998; Wong, Foo, Want, & Wong, 2007). In India, Singh (2006) established that different professions require different levels of EI namely extremely high, high and average. For example, artists and social workers fall under extremely high EI category, teachers, businessmen and police fall under high EI category and the information technology people fall under the average EI category. These scales differ in their conceptual frameworks and measuring approaches. Researchers have put in considerable efforts to compare the various measures of EI. The MSCEIT is a good instrument and has emerged as a popular tool for measuring EI (Deepa & Krishnaveni, 2008). Before selecting the right instrument to assess EI abilities, it is essential to consider the influence of culture on emotions and their management.

Since the 1960s, scholars have been interested in the relations between culture and various emotional phenomena. Culture varies on a variety of fundamental values, attitudes, and assumptions. Cultures differ in: (1) display and feeling rules; (2) the values attached to events and their importance; (3) the experiences and attitudes with which one evaluates and handles emotions; (4) appraisal of events; and (5) behavior generation (Izard, 1980; Parnell & Tarek, 1999; Schermerhorn & Harris Band, 1997; Stearns, 1997). Culture affects emotion in four ways: (1) through the manner in which we perceive emotional stimuli; (2) by directly altering emotional expressions; (3) by determining social relationships and judgments (the type); and (4) by highly ritualized rules for the displaying of behavior such as grief (Lazarus, Averill, & Opton 1970).

Research efforts by various scholars such as Karl Heider (1991), Catherine Lutz (1988), and Sulamith Potter (1988) suggest that cultural contexts and heritages influence individuals' emotional responses (Tsai, 1999). The interpretation and evaluation of emotions is intimately related to our cultural perspectives (Wouters, 1989; Mesquite & Frijda, 1992). Evidence from the adult literature supports the notion that culture influences emotional reactivity in specific ways (Kathryn Lee & Levenson, 1992; Takenaka & Zaichowsky, 1990). In addition to national culture, organizational and professional cultures also have an influence on the way emotions are perceived, interpreted and acted upon (Shipper, Kincaid, Rotondo, & Hoffman, 2003). So it is probable that EI also will vary and even take on different meanings across cultures.

The studies discussed thus far support the notion that culture influences the evaluation and behavioral responses pertaining to emotional information. Hence the ability to process emotions for positive outcomes (i.e., EI) also differs across cultures. Based on this, we conclude that the existing measures of EI, which are based on different cultures, are not appropriate for India

There are a few instruments catering to the Indian context but they are either based on a different conceptualization (Singh, 2006) of EI or cater to a different audience (Shanwal, 2004). Hence it becomes necessary to develop an instrument for measuring EI of individuals in the work environment, tailored to the Indian culture. In order to develop an instrument to measure EI we studied the processes involved in the generation of emotions and their management.

**Processes Involved in the Generation of Emotions**

The term emotion has fuzzy boundaries and refers to an astonishing array of happenings, ranging from mild to intense, brief to extended, simple to complex, and private to public. This incredible diversity has resulted in various theoretical perspectives on emotions and their generation. The study of emotions received a scientific status when Charles Darwin (1872) talked about the universal nature of facial expressions. Following Darwin's findings about the universal nature of facial expressions, William James tried to bring out the processes that produce an emotion. He proposed the James-Lange theory of emotions, which states that in response to experiences in the world, the autonomous nervous system creates physiological changes (events like rise in heart rate, perspiration, and dryness of mouth). Emotions are the feelings which come about as a result of these physiological changes, rather than being their cause. The James-Lange theory was seriously challenged by Cannon (1927), who proposed that people feel the emotions first and then act upon them.

James-Lange theory is a feeling theory and Cannon-Bard is a behaviorist theory. A shift towards a cognitive approach to emotions was brought out by Magda Arnold (1960). She developed her cognitive theory, which stated that the first step in emotion is an appraisal of the situation. The initial appraisal of the situation starts the emotional sequence and results in the appropriate action and emotional experience itself, so that the physiological changes accompany, but do not initiate the action and experience (Scherer et al., 2001a).

The cognitive approach to emotions was taken further by Richard Lazarus, who identified two essential factors with respect to emotions. First, what is the nature of the cognitions (or appraisals) which underlie separate emotional reactions (e.g. fear, guilt, etc.). Second, what are the determining antecedent conditions of these cognitions? He divided the appraisal process into primary appraisal and secondary appraisal. In primary appraisal, the significance or meaning of the event to the organism is established. In secondary appraisal, the ability of the organism to cope with the consequences of the event is assessed (Scherer et al., 2001b). The physiological and psychological factors underlying emotional appraisal behaviors were explained further by Schachter and Singer (1962), through their two-factor theory and their experiment.

Though there are different conceptions and perspectives on emotions, there are important similarities among various approaches to emotion. The appraisal component is placed at the forefront of defining and studying emotional experience by all the approaches. Many

**Figure 1: Gross's Model of Emotion Generation**
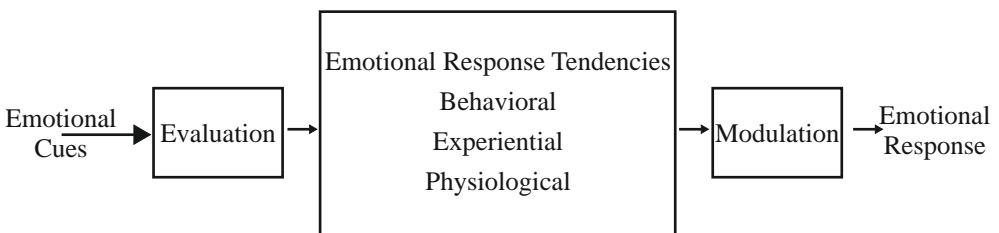
According to Gross, emotion begins with an evaluation of emotion cues. The evaluation process triggers a coordinated set of response tendencies that facilitate adaptive responding. These response tendencies involve experiential, behavioral, and physiological systems. The response tendency from each system can be modulated and it is this modulation that gives rise to the final manifest emotion. This model brings out the major point of convergence among various researchers (Arnold, 1960; Buck, 1985; Ekman, 1972; Frijda, 1986; Izard, 1977; Lazarus, 1991; Levenson, 1994; Plutchik, 1962; Scherer, 1984; Tomkins, 1962) and hence can be used as a basis for describing how an individual processes an emotional stimulus, to yield a response. The various steps involved in the processing of emotional stimuli (by individuals) are presented in the next section.

A New Model for Emotion Generation in Individuals

An individual interacts with his/her own self and the external environment, which consists of several entities like his/her own biological system, situational elements, family, friends, work groups, religious groups, nationals etc. Each entity is associated with some emotional information which has to be processed by the individual, when he/she interacts with them. We propose a model to describe how emotional information is processed in an individual (See Figure 2).

Figure 2: Process Model for Generation of Emotions
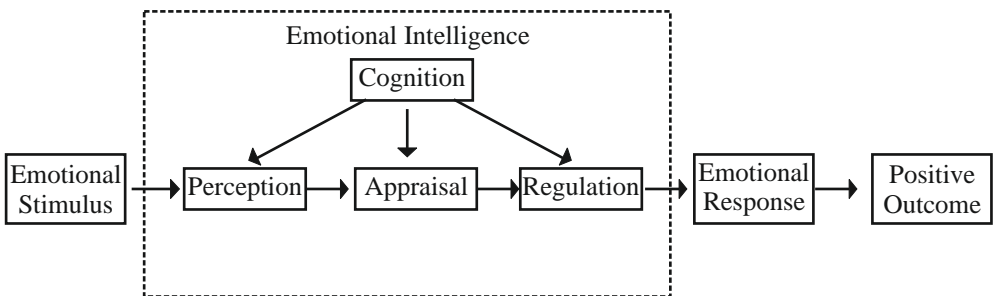
The stimulus can be any happening that has an impact directly or indirectly on the sensory organs of the individual. It can occur internally or externally with respect to the individual. The stimulus is received and is interpreted. Interpretation answers the question "What is happening?" This process is called perception. Once interpreted, the individual appraises the stimulus. The appraisal involves various aspects like the significance of the stimulus with respect to the goals and needs of the individual, past experiences of similar nature, and future implications of the event or stimulus on the individual. The appraisal process answers the question "What does this stimulus mean in my present situation and how will it affect me?" Once the appraisal is over, the individual produces a response for the stimulus which will manifest in four domains namely emotional, physical, visual and intellectual. An individual with EI regulates or modulates this response, in order to achieve positive outcomes. These experiences are stored in memory and will be used by the individual in the future processing of emotional stimuli. The model shows the step by step processing of emotional information, with the involvement of cognition in each stage. This processing differs from individual to individual, which forms the basis for the emergence of emotional intelligence, as discussed below.

Emotional Intelligence – An Ability to Manage Emotions

Individuals differ in every step of the emotion generation process shown in Fig 2. Each individual will have different experiences every day with the external and internal environment, which provide various stimuli or cues to him/her. Each individual will also differ in the way he/she evaluates the stimuli and hence a particular stimuli can evoke different response tendencies in different individuals. There will be distinct differences between individuals in the way they modulate their response tendencies and hence the manifest emotions will also differ. This individual difference is what is termed emotional intelligence and determines if an individual will be successful in his personal and professional lives. Based on this, we propose a new definition of EI as below
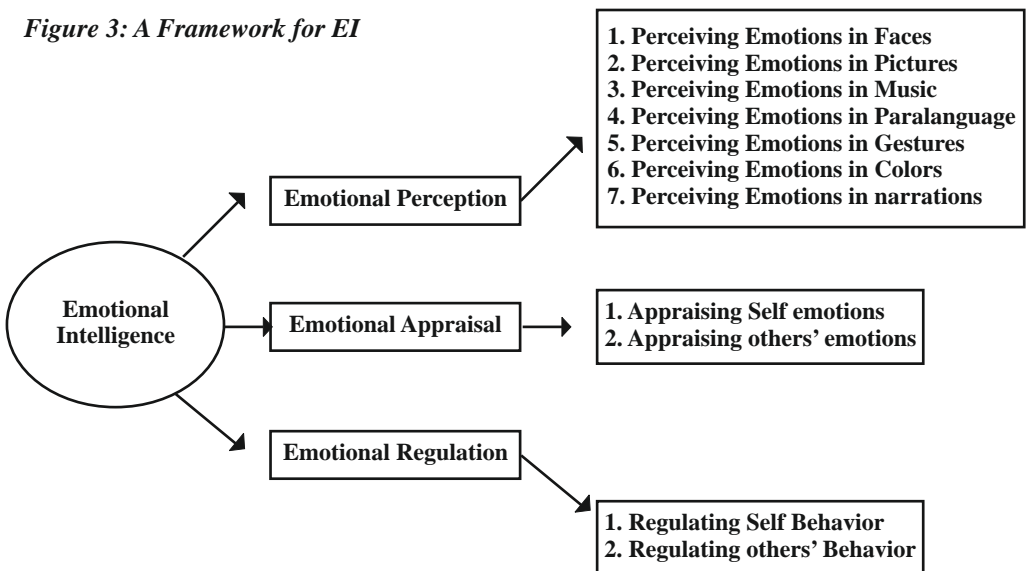
Emotional Intelligence is the ability of an individual to perceive various emotional stimuli associated with his/her self and his/her environment, appraise and regulate them, in order to produce appropriate behavioral responses, resulting in improved intrapersonal and interpersonal outcomes

This definition yields three constituents of EI namely perception, appraisal, and regulation and they are defined below.

- Emotional perception is the ability of an individual to interpret the various emotional stimuli triggered by the entities of his/her environment and organize them for further processing.
- Emotional appraisal is the ability of an individual to understand the emotional information supplied by the perception process and evaluate it cognitively, with respect to his/her environment, so as to decide the appropriate responses to the stimuli.
- Emotional regulation is the ability of an individual to regulate the response fed by the appraisal mechanism according to the person/object/situation in order to elicit positive outcomes.

The three constituents of EI yield a framework as shown in Figure 3.

Figure 3: A Framework for EI

Emotional Intelligence → **Emotional Perception**	**1. Perceiving Emotions in Faces** **2. Perceiving Emotions in Pictures** **3. Perceiving Emotions in Music** **4. Perceiving Emotions in Paralanguage** **5. Perceiving Emotions in Gestures** **6. Perceiving Emotions in Colors** **7. Perceiving Emotions in narrations**
→ **Emotional Appraisal**	**1. Appraising Self emotions** **2. Appraising others' emotions**
→ **Emotional Regulation**	**1. Regulating Self Behavior** **2. Regulating others' Behavior**

Individuals differ in the ability of EI, due to various factors. Age is said to correlate positively with EI (Goldenberg, Matheson, & Mantler 2006; Dulewicz & Higgs 1999; Mayer, Caruso & Salovey 2000; McConatha, Leone, & Armstrong 1997; McConatha, Lightner, & Deaner 1994) and women have higher EI than men (Goldenberg et al 2006; Brackett, Mayer, & Warner 2004; Cavallo & Brienza 2002; Cherniss & Goleman 2001; Kimmel 2000; McConatha et al. 1997; McConatha et al. 1994). EI is also said to be influenced by educational background (Goldenberg et al. 2006; Fatt 2002; Nikolaou & Tsaousis 2002), culture (Rajendran, Downey & Stough 2007), contextual factors (Rivera-Cruz 2004), and cognitive intelligence (Rosete & Ciarrochi 2005; Cote & Miners 2006).

Based on the framework and the review of literature, the main objective of this study is to diagnose the EI of the employees of the IT/ITES sector of South India. This yields various sub objectives namely

1. Developing and validating an instrument to diagnose the EI of individuals in the Indian Context

2. Analyzing the impact of demographic variables like gender, age, and education on the EI skills of the employees

METHODOLOGY

Based on the literature review, we concluded that a new measure of EI has to be developed for the Indian context. The methodology involved in the development of a new measure of EI is described below in brief.

Development and Validation of a New Measure of EI

We used the framework (Figure 3) as the base for the instrument. We designed the items of the test to connote the emotional stimuli we receive in our day to day life from the various entities of our environment. We ensured that the items suit the Indian context and culture and also covered the three constituents of EI.

Overview of the instrument contents. The perception scale evaluates the ability of the respondents to identify emotions depicted in various entities like faces, colors, music, pictures, narrations and gestures. We used images of faces with emotions, audio clips with music and dialogues, colors, narrations depicting emotions, and images of a few gestures to test the perception skills of respondents. The appraisal and regulation sub scales use situational judgment tests (SJTs) to measure the appraisal and regulation skills of the respondents. SJTs can measure many different constructs like cognitive ability, personality, age, and length of job experience. Due to this, they are now thought of as a measurement method and are successful predictors of future job performance (McDaniel and Nguyen, 2001). Hence we decided to use situational judgment tests in the subscales of appraisal and regulation. In order to design the situations for the SJTs, we conducted a study.

Study to design situations used in the test. We conducted an unstructured interview with 168 respondents (representing all the sectors of the Indian industry), chosen by convenience sampling. We interviewed the respondents to find out the emotional challenges faced by them in their day to day life at work and at home. The sample consisted of equal number of men and women. Out of the 168 respondents, 80 were from manufacturing sector and 88 were from the service sector. The age of the respondents ranged from 20 to 60. We contacted the respondents formally either in person or through telephone and interviewed them. In the interview, we asked the respondents to list out the emotionally challenging situations faced by them both at work, and at home. We consolidated the responses to identify the top 10 challenges cited by the

respondents. The challenging situations formed the basis for constructing the situational judgment tests for the appraisal and regulation constructs of EI (Please refer to Appendix 1 for sample items of the three subsections). Based on this study, we constructed an initial pool of 86 items (refer to Appendix 2 for the initial structure of the instrument).

Scoring method of the instrument. The traditional methods of scoring like expert opinion, factor analysis, criterion scoring and target scoring are not adequate (Barchard & Russell, 2006), whenever one tries to assess an ability for which (a) there are group differences in test scores which might not reflect true differences in the underlying ability, (b) answers are context specific, (c) experts believe there are correct answers but disagree about what these are, or (d) no bonafide experts exist. In such cases, consensus scoring presents an attractive alternative. For EI abilities, there are neither correct answers nor bonafide experts. Hence it is appropriate to use consensus scoring for EI tests. Consensus scoring has been successfully used to score tests of emotional intelligence (Legree, Psotka, Tremble & Bourne 2005; Mayer, Caruso, & Salovey 2000; Mayer, Salovey, Caruso, & Sitarenios 2003; Zeidner, Shani-Zinovich, Mathews, & Roberts 2005) and emotional perception (Geher, Warner, & Brown 2001; Mayer, DiPaolo, & Salovey 2000)

In consensus scoring, a respondent's score on an item is based upon the responses of the norm group (which might simply be all those who responded to the item). Several different consensus scoring methods like proportion, mode, lenient mode, distance, and adjusted distance methods have been invented. Of these methods, only proportion and mode consensus scoring result in unidimensional scoring and demonstrate convergent validity (MacCann, Roberts, Mathews, & Zeidner 2004). Based on this, we used proportion consensus scoring in the EI instrument.

Establishing the reliability and validity of the instrument. We piloted the 86 item instrument in order to establish its reliability and validity. We established the reliability and validity of the scores, by using the methods shown in Fig 4.

Figure 4: Procedures used for Instrument Validation
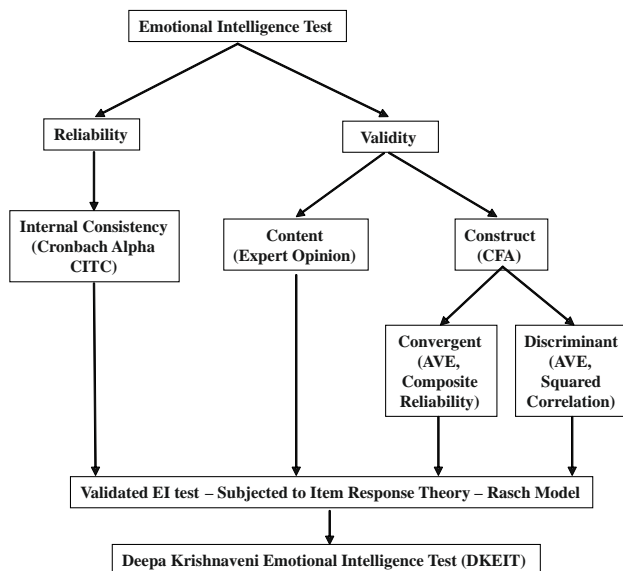
We distributed the instrument to 25 respondents comprising 10 field experts (psychiatrists, clinical psychologists, teachers of psychology) and 15 non experts (chartered accountants, engineers, business executives, and teachers of higher education). We got the inputs of non experts on the usability, clarity and layout, as they completed the questionnaire. We also got the response of the experts and their opinion on the conceptualization, framework and the content of the questionnaire. Ninety five per cent of the respondents felt that the instrument is easy to use. However, they felt that some words are ambiguous and hence synonyms should be given for difficult words. They also found repetitive situations in the appraisal and regulation subscales. We removed the redundant situations in appraisal and regulation subscales, based on the inputs got from this study. We validated the content of the new EI scale with 10 experts, who rated each subscale on a 4-point scale in terms of whether the content in each subscale is valid and relevant to the conceptual framework. Based on content validity index, we reduced the 86 item scale to a 47 item scale (refer to Table 1 for the structure of the 47 item scale) and subjected it to reliability and validity tests.

We developed an online version of the 47 item instrument and hosted it in a website (www.eiindia.org), to ensure ease of use for the respondents. We selected 250 respondents through convenience sampling from the industries (both manufacturing and service sector) of Coimbatore, an important city in Tamilnadu, India. Out of the 250, 194 respondents provided complete data, yielding a response rate of 78 per cent.

As a prerequisite for reliability analysis, the instrument needs to be purified. Purification is a procedure by which the items which do not contribute to the internal consistency of a particular construct are removed. It is done by examining the corrected-item total correlation (CITC) of each item with respect to a specific dimension of a construct. A rule of thumb is to delete items whose CITC scores are below 0.4. On the other hand, certain items with CITC less than 0.4 can be retained and certain items with CITC greater than 0.4 can also be removed to dramatically improve the internal consistency reliability of the construct. The decision to remove or retain an item is made based on alpha if deleted value. With these guidelines about alpha and CITC as the basis, we purified the three subscales of the EI test and obtained a final scale of 18-items. The structure of the final instrument is shown in Table 1. It had an overall Cronbach value alpha value of 0.8 and demonstrated construct and content validity.

Table 1: Structure of the Purified Instrument

Sub Scale	Items before Purification	Items after Purification
Perception	15	4
Appraisal	12	4
Regulation	20	10
Total	**47**	**18**

We used Partial Least Squares (PLS) software to test the purified scale, in order to demonstrate its construct validity. We checked convergent validity using Average Variance Extracted (AVE) and composite reliability. We used AVE to establish the discriminant validity of the instrument. We validated the purified scale using the Item Response theory. We used Rasch Model to examine the validity of the instrument. The infit and outfit mean squares (0.4 to 1.2), person reliability (0.6), and item reliability (0.89) were found within acceptable limits (Bond & Fox, 2001; Smith, 2004). The final reliable and valid instrument was named Deepa Krishnaveni Emotional Intelligence Test (DKEIT). The methodology used to diagnose the EI levels of the employees of IT/ITES sector is described in the next section.

Methodology for Diagnosing the EI levels of the IT/ITES Employees

We chose the major IT hubs of South India namely Bengaluru, Hyderabad, Chennai and Coimbatore as the target places. We developed an online version of the test and hosted it in a website (http://www.eiindia.org). Using an initial pool of 10 contacts from the target areas, we circulated the information about the test. We also used emails and personal contacts to spread this information. We also approached some ITES organizations at Coimbatore in person and collected data from them. Some of the organizations did not prefer the online test. Hence hard copies of the test were also distributed. In all, we got 533 responses. The responses covered IT/ITES employees from all the major hubs of South India namely Bengaluru, Hyderabad, Chennai and Coimbatore. The demographics of the sample are shown in Table 2.

Table 2: Demographics of the Sample

Variable	Groups	N	%
Gender	Men	341	64
	Women	192	36
Education	UG	303	57
	PG	230	43
Age Groups	20 – 40	513	96
	41 – 60	20	4

Note: UG = Under graduate; PG = Post graduate; N = number of respondents; % = percentage of respondents

In the sample, 64 per cent were male and 36 per cent female; 57 per cent were under graduates and 43 per cent were post graduates. Majority of the sample (96 per cent) were in the age group of 20 to 40. Only 20 respondents were aged above 40. The average age of the respondents was 28. The minimum age was 20 and the maximum age was 57.

ANALYSIS

We consolidated the responses of the sample to diagnose the EI level of the employees. The average scores of the respondents in the EI test are shown in Table 3. The mean scores of EI and its constituents are shown in Figure 5.

Table 3: Average scores of EI and its constituents

Variables	Mean(A)	SD	% of Respondents Below A	A & Above
Perception	16	3.92	39	61
Appraisal	25	4.01	40	60
Regulation	42	6.87	34	66
EI	83	9.47	41	59

Note: EI = Emotional Intelligence; A = Average or Mean; SD = Standard Deviation; % = Percentage; Below A = Below Average; A & Above = Average and Above average

Figure 5: Graphical Representation of Mean scores of EI and its constituents
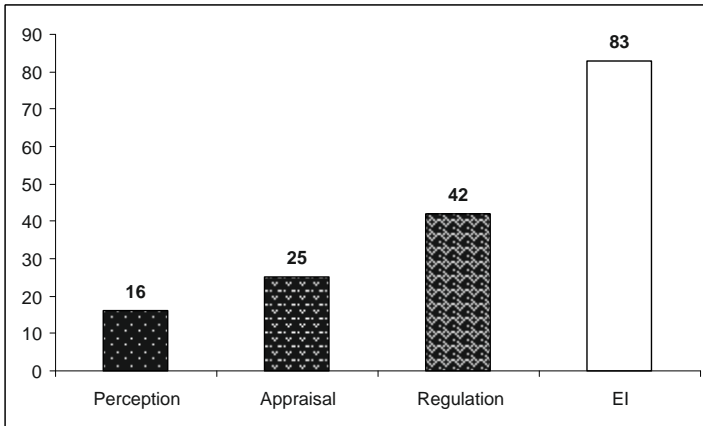
The average EI score of the respondents is 83. Out of the 533 respondents, 41 per cent have scored below average and 59 have scored average and above in overall EI. The average EI levels of the respondents across gender, education, and age are shown in Table 4.

Table 4: Mean scores of EI and Constituents across Gender and Education

Variable	Groups	N	%	P	A	R	EI
Gender	Men	341	64	15	25	42	82
	Women	192	36	17	25	43	84
Sig Level in t – test				*0.000**	*0.152*	*0.262*	*0.003**
Education	UG	303	57	16	25	42	82
	PG	230	43	16	25	43	83
Sig Level in t – test				*0.369*	*0.532*	*0.105*	*0.285*
Age Group	20 – 40	513	96	16	25	42	83
	41 - 60	20	4	14	25	46	85
Sig Level in t – test				*0.097*	*0.808*	*0.027**	*0.415*

Note: N = Number of respondents; %= percentage of respondents; P = Perception; A = Appraisal; R = Regulation; EI = Emotional Intelligence; UG = Under graduate; PG = Post graduate; *= $p<0.05$

There is a significant difference in the perception score and EI score between men and women. Women have scored higher than men in these two variables. Similarly the age groups also differ in their regulation scores. The respondents falling in the group 41-60 have scored higher in regulation. Education does not have an influence on EI and its constituents. The correlation between EI and its constituents is shown in Table 5

Table 5: Correlation between EI and its constituents

	Perception	Appraisal	Regulation	EI
Perception	*1.00*			
Appraisal	-0.02	*1.00*		
Regulation	-0.07	**0.286****	*1.00*	
EI	**0.350****	**0.621****	**0.816****	*1.00*

Note: EI = Emotional Intelligence; ** = Correlation is significant at the 0.01 level (2-tailed)

The three constituents of EI have a significant correlation with the overall EI scores. The appraisal and regulation scores have a significant correlation. A cross tabulation between the EI level and Age group is shown in Table 6.

Table 6: Age group and EI Levels

Variables		Age Group		Total
		20-40	41-60	
EI Level	**Below A**	208	10	218
	A & Above	305	10	315
	Total	513	20	533

Note: EI = Emotional Intelligence; Below A = Below Average; A & Above = Average and Above.

There is no significant correlation between Age and EI .There are 513 people in the age group 20 to 40. Out of this, 59 per cent have scored average and above in EI. In the second age group (41 to 60), there are only 20 persons, out of which 50 per cent have scored average and above in EI.

DISCUSSION

From the analysis it is clear that the EI level of the IT and ITES sector is on the higher side. Women had scored higher than men in perception and overall EI. The age group of 41 to 60 had scored higher in regulation. There was a significant correlation between EI and its constituents. However, correlation was not significant between age and EI.

A previous study had classified the IT sector people in the average EI category (Singh, 2006). According to this study, the IT/ITES people have an average EI score of 83, which falls in the high EI category as per the scoring mechanism of the instrument used in this study. The IT/ITES sector has been in operation for quite some time and is maturing day by day. Its employees work in a challenging environment which is multicultural in nature. The prolonged exposure to this environment and their education level might have contributed to their high EI scores.

The literature review showed that individuals will differ in their EI abilities due to age, gender, educational level, contextual factors, and culture. The results of this study have shown that women have higher perceiving skills and higher EI, compared to men (Refer Table 4). This is in line with the findings of the previous studies (Goldenberg et al. 2006; Brackett, Mayer, & Warner 2004; Cavallo & Brienza 2002; Cherniss & Goleman 2001; Kimmel 2000; McConatha et al. 1997; McConatha et al. 1994). Experts have discovered that there are differences in the way women's and men's brain are structured and the way they react to events and stimuli. Women tend to communicate more effectively than men and utilize non verbal cues such as emotion, tone, and empathy whereas men tend to be more task-oriented. Men have a more difficult time understanding emotions that are not explicitly verbalized, while women tend to intuit emotion and emotion cues (Hensley, 2009). Women also express their emotions better, because their emotional thinking centers are close to the speech centers, so they can verbalize their emotions better. Men have a simpler limbic system, and their emotions are bound to action (Anitei, 2008). These facts justify the difference in EI levels between men and women.

The study results did not bring out a significant impact of education and age on EI. There was no significant correlation between EI and age. This is in contrast to the findings from the literature review. Majority of the respondents belong to the same age group and hence the impact of age did not manifest itself strongly in this study. The age group of 41 to 60 had a higher average score in regulation of emotions. This is a small evidence to show that EI skills increase with age. As people become old, they learn from their life experiences and become more mature with respect to emotions and their regulation. Hence they are good in emotion regulation.

The three subscales of the EI test have significant correlation with the overall EI score. According to the definition of EI, an individual perceives the emotional stimuli, appraises it, decides the response to the stimuli, and regulates it, resulting in positive outcomes. The perception subscale has the least correlation whereas the regulation scale has the highest correlation with the overall EI score.

The literature review revealed the impact of EI on our professional and personal lives. Emotions and feelings often arise within us in response to various stimuli that surrounds us and the actions and behaviors of others with whom we interact. Together with the cognitive component of our thought processes, they shape the decisions we make and the behaviors we display. Research by Damasio (1994) indicates the crucial role played by emotion-based intuition in making simple decisions. An emotionally intelligent person is one who has learned to check impulses and, at the same time use the information provided by emotions to craft behaviors and responses in charged situations (Rafaeli & Sutton, 1989). Therefore understanding emotions and making them work for us and for others around us is a valuable skill (Brown, 2003). Having said this, one of the key questions that arises in one's mind is whether EI can be developed. The findings from the field of psychotherapy (Barlow, 1985) and

training programs (Marrow, Jarrett, Rupinski, 1997) have shown that people can improve their emotional competence with sustained efforts and systematic training programs. In addition to this, the findings in the field of affective neuroscience have shown that the brain circuitry of emotion exhibits a fair degree of plasticity even in adulthood (Davidson, Jackson, & Kalin, 2000). A series of longitudinal studies have shown that emotional intelligence competencies can be significantly improved, and, moreover, these improvements are sustainable over time (Boyatzis, Cowan, & Kolb, 1995)

Thus we can conclude that EI as an ability can be developed. However, the factors that strongly influence its development (genetics, parenting, experiences) are largely in question and are differently emphasized by different EI proponents (Mathews, Zeidner, & Roberts, 2003). But then quite a few studies are available to prove that EI scores have improved after training. There was a significant increase in the EI scores of Brazilian managers, after they underwent EI training (Sala, 2001). The EI scores showed an increase of 50 per cent after training for a multinational manufacturer (Serge Sardo, 2004).

Based on the belief that EI can be developed, a few organizations in the western countries like sixseconds.org and TalentSmart have designed programs to develop EI and have commercialized it. These training programs are designed based on different approaches of EI and focus on the organizational context, at the individual level. EI training is yet to gain foot in India. There is immense scope with respect to development of EI training programs, which cater to our national culture. Different professions require different levels of EI (Singh, 2006; TalentSmart, 2009). Hence researchers who design EI training programs to develop EI should consider national, professional and organizational cultures into account. This study is a first step towards effective usage of EI concept in the Indian organizations. The instrument designed in this study is suitable for measuring the EI level of adults in any work environment in India. However, for special professions like Doctors, Lawyers, Policemen etc, the situational judgment tests have to be modified according to the professions. There is much scope in this direction and we invite the attention of researchers towards the creative use of this concept in India. By doing so, we can enhance the contribution of many sectors, without compromising the well being of the employees involved in those sectors.

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Section 1 – Emotional Perception

Please identify the emotions expressed by the following faces. Circle the appropriate emotion.

	1. Happiness
	2. Sadness
	3. Fear
	4. Anger
	5. Surprise
	6. Other

Section 2 – Emotional Appraisal

Please read the following incidents and answer the questions given. Please select the appropriate emotional words from the choices given below each incident.

Your neighbor is a good man and he offers you help whenever you need it. One day he comes to your house and asks for a hammer. You reply that your hammer is broken. At the same instant, your spouse walks in with the hammer. How will you feel? How will your neighbor feel?

My feeling	**My neighbor's feeling**
a. Uncomfortable	a. Anger
b. Annoyed	b. Annoyed
c. Dejected	c. Sad
d. Tense	d. Uncomfortable
e. No feeling	e. No feeling
f. Other	f. Other

Section 3 – Emotional Regulation

Please read the following situations and circle the appropriate response to the situation.

Your subordinate comes late to the office for the third time this month. He is talented and is valuable for the team. But his tardiness (coming late) is increasing nowadays. As a manager, what will you do?

i.   I will seek more information on his late arrival and see if he has any personal issues due to which he is coming late. I will try to help him out of his issues.
ii. I will shout at him and tell him that he is careless and does not care a damn about discipline at work
iii. I will ignore this and decide to talk to him the next time he is late.
iv. I will call him and tell him that I am disappointed by his tardiness and warn him of stern action the next time he repeats it.   Other

Appendix 2
Initial Structure of the instrument (Pre Pilot Study)

Sub Scale	Number of Items
Perception	
Faces	5
Music	5
Pictures	5
Paralanguage	5
Narrations	6
Gestures	10
Colors	5
Total	42
Appraisal	14
Regulation	30
Total	**86**