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Development of a Measure of Emotional Intelligence

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This paper presents the findings of a study initiated for developing and standardizing a measure of Emotional Intelligence (EI). While writing the items, the study has followed Goleman's (1998) Model of EI competencies. Five dimensions: Self Awareness, Self Regulation, Motivation, Empathy, and Social Skills have been incorporated. Data were collected from managers (N = 263) from various functional areas and representing a heterogeneous set of organisations. The scale was constructed and tested to examine the hypothesized positive relationship with three variables viz., organizational commitment, emotional expression and quality of life. The five dimensions of EI were positively correlated with organizational commitment, emotional expression, and quality of life, suggesting concurrent validity. The paper discusses the precautions while applying the results of the study.

The quest for managing and enhancing effectiveness of people in organizations has driven the research on identifying major contributors to performance. Emotional intelligence (EI) has been identified as one of the important behavioural constructs considered to be a major contributor to performance (Goleman, 1995; Goleman, 1998; Hay Group, 2003). According to one of the claims, EI accounts for 85 to 90 percent of outstanding performance in the top management, thereby resulting in 20 percent more earning for companies (Goleman, 1998; Kemper 1999; Watkin, 2000). EI has also evoked a keen interest among practitioners because of its wide applicability to a host of work place issues including job satisfaction, absenteeism, organizational commitment, organizational citizenship (Cooper & Sawaf, 1997; Gates, 1995; Megerian & Sosik, 1996; Sosik & Megerian, 1996; Wright & Staw, 1999). Unfortunately, few studies have been undertaken to validate the features of the concept and its measurement (Rozell, Pettijohn, & Parker, 2002).

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This work is a modest attempt to develop a measure of EI in Indian Setting.

Yale University psychologists Peter Salovey and John Mayer were the first to use the term 'emotional intelligence' in 1990 in the *Journal Imagination, Cognition and Personality*. However, the concept gained popularity through Goleman's (1995) best seller book titled *Emotional intelligence*. Details regarding evolution of the concept can be seen (Bar-On & Parker, 2000; Sibia, Srivastava, & Misra, 2003). Current conceptualization of EI is very similar to what Thorndike (1920) referred to as social intelligence- "the ability to understand and manage men, women, boys and girls- to act wisely in human relation." Gardner (1983) has referred to the same as intrapersonal and interpersonal intelligence in his theory of multiple intelligence. Mayer and Solvey (1993) defined EI as "a type of social intelligence that involves ability to monitor one's own and others emotions, to discriminate among them, and to use the information to guide one's thinking and actions" (p. 433). Salovey and Mayer (1990) suggested a four-dimensional model. The first dimension consisted of Emotional perception and identification involving recognition and in putting information from the emotion system. The second and third dimensions were emotional facilitation of thought and emotional understanding that involved further processing of emotional information with a view of problem solving. The emotional facilitation of thought dimension involved use of emotions for improving cognitive processes, whereas emotional understanding incorporated cognitive processing of emotions. The fourth dimension emotional management consisted of emotional self management and the management of emotions in others.

Another popular approach to measure EI is Bar-On's (1997) EQ-i Q which defines EI as "an array of non-cognitive capabilities, competencies, and skills that influence one's abilities to success in coping with environmental demands and pressures". His self report EQ-i generates a total EQ score and five EQ composite scales consisting of 15 subscale scores: (1) Intrapersonal EQ (Self regard, emotional self awareness, assertiveness, independence and self-actualization) (2) Interpersonal EQ

(Social responsibility and interpersonal relationship) 3. Stress management EQ (Stress tolerance and impulse control), (4) Adaptability EQ (reality testing, flexibility, and problem solving), and (5) General mood EQ (Optimism and happiness).

Goleman and his colleagues (Boyatzis, Goleman & Rhee, 2000) have suggested that EI is 'a convenient phrase with which it is easier to focus attention on human talent. Even though it is a simple phrase, it incorporates the complexity of a person's capability'. Based on extensive research Goleman (1995, 1998) has proposed five dimensions of EI consisting of 25 competencies namely,

1. *Self awareness*: a. Emotional Self awareness, b. accurate self assessment, and c. self confidence,
2. *Self regulation*: a self control, b. trustworthiness, c. conscientiousness, d. adaptability, and e. innovation,
3. *Self motivation*: a achievement drive, b. commitment, c. initiative, and d. optimism,
4. *Empathy*: a. understanding of others, b. developing others, c. service orientation, d. leveraging diversity and e. political awareness, and
5. *Social skills*: a. influence, b. communication, c. conflict management, d. leadership, e. change catalyst, f. building bonds, g. collaboration and cooperation, and h. team capabilities.

Emotional Competence Inventory (ECI) Version2 consisted of only 18 competencies grouped into four dimensions: Self-Awareness, Self Management, Social Awareness and Social Skills (Hay Group, 2002). In the revised model, Self Regulation and Self Motivation have been merged and has been Self Management consisting of six competencies: emotional self control transparency, adaptability, achievement and optimism. Empathy has been renamed as social awareness and trimmed to contain three competencies: empathy, organizational awareness, and service orientation. Similarly, Social skills scale has been revised to cover six competencies: developing others, inspirational leadership, change catalyst, influence, conflict management and team work and collaboration.

The present study has followed Goleman's (1998) Model of EI and attempted to measure core dimensions of EI namely: Self awareness, self-regulation, Motivation, Social awareness, and Social skill.

Keeping the psychometric concerns in mind (Cronbach, 1951; Cronbach & Meehl, 1955) a modest effort has been made to develop self diagnostic measure of EI to be used in research and which can serve as a basis for reflecting on one's own EI competencies. In this

paper procedure of developing an EI measure and psychometric detail regarding items and scales have been reported. For establishing concurrent validity, following hypotheses were proposed:

1. Since managers high on EI competencies will be self aware about their emotional states and also have control over their emotions, it is expected that high EI will be positively related to with Emotional expression.
2. Persons with high EI will be good performers. Such persons in return display a high sense of organizational commitment, thus it is expected that EI competencies will be positively related to organizational commitment.
3. Persons with high EI because of their competencies, will be doing better in their work and personal life and will enjoy whatever they are doing, thus it is expected that EI dimensions will be positively related to quality of life.

Method

Sample

Two hundred sixty-three managers (191 Male and 72 Female) aged on average 37 years and holding a graduate or a post graduate degree participated in the study. These managers belonged to a variety of industries and represented diverse functional areas.

Procedure

While writing items we considered covering all the five elements of EI namely self awareness, self regulation, motivation, empathy, social skill.

As a first step an item pool of around 210 items was generated. Three expert psychologists were asked to check these items for clarity and classify these items into 23 categories and then further asked to classify 23 categories into five major categories. There was lot of overlap between motivation and self regulation categories. Conscientiousness was equated to intrinsic motivation. The item which were considered ambiguous by two experts were rejected. Response categories for items were:

- 5 = Describes me very well
- 4 = Describes me well
- 3 = Describes me moderately well
- 2 = Describes me a little
- 1 = Not at all describes me

A questionnaire consisting of 172 items including the items inserted for validity assessment and biographical was administered on 263 managers. This set consisted both positively and negatively worded items. We examine

bi-variate correlations among variables to check the behaviour of items. It was observed that many negatively worded items even when reverse scored did not reveal similar correlation as was expected theoretically. It appeared that respondents were confused with reversed worded items. To avoid any confusion it was decided that while making scales only positive worded items would be included. As a consequence of this decision, 21 items were dropped. There were 21 items meant for checking validity. These items measured Emotional Expression (5 items), Organizational Commitment (6 items), and Quality of life (10 items). Further six items were used for eliciting personal information. With the exclusion of these 27 items, still 124 items were there. In research studies, researchers find it difficult to get response of managers on such a long questionnaire and the feedback from the field was that the questionnaire was too long. It was therefore decided to reduce the size while retaining reliability within acceptable limits.

Cronbach Alpha has been taken as a measure of reliability. It was decided that a scale with an Alpha reliability of .70 or more would be considered adequate reliability (Nunnally, 1978). This is conventionally accepted as a thumb rule for reliability. It was also decided that that item must have a minimum of .20 item-to-total correlation. This was done to increase homogeneity in the scale, i.e., each item is measuring the same thing. To ascertain face validity and content validity, it was decided that at least three psychologists agreed that item on face value belonged to the dimension that it aimed to measure. Concurrent validity issue was also addressed by having scores of respondents on certain criterion variables.

Other Measures Used

Three measures were used to examine concurrent validity. They are:

Emotional Expression: The scale consisted of five items regarding persons' sense of adequacy in expressing emotions. Response categories were on 5-point scale from Describes me very well to Not at all describes me. Typical items of the scale are: (a) I am quite spontaneous in expressing my feelings and (b) I don't have any hesitation in expressing my feeling to a member of opposite sex. The scales statistics are as follows: $M = 17.40$; $SD = 3.09$; and $\text{Alpha Reliability} = .58$.

Organizational Commitment: This scale consists of six items related to organizational pride, loyalty, attachment and emotional investment in organization. Response categories were on 5-point scale from "Describes me very well" to "Not at all describes me". Typical items in the sale are: (a) I am proud to work for my organization, and (b) My decisions are guided by overall interest of the organization. The scale statistics

are as follows: $M = 22.84$; $SD = 3.71$; and $\text{alpha reliability} = .82$.

Quality of Life: This measure consists of 10 items and is a composite of current assessment one's achievement, contribution and satisfaction at work, personal life and relationships. Some typical items of the scale are: (a) Are you satisfied with your life?, (b) Are you satisfied with your work? (c) Do you consider yourself successful? And (d) Are you satisfied with the kind of relationships you have? Here again response categories were on five point scale. The scale statistics are: $M = 36.39$; $SD = 6.37$, and $\text{Alpha reliability} = .86$.

Result and Discussion

While forming empirical clusters of items we had inter-item, item-to-total and alpha reliability criteria for selecting an item in a cluster. Hierarchical clusters were formed by including items with positive correlation. Few items were dropped because they had zero or a negative correlation with other item in the cluster. Item-total correlation criterion of at least .20 also helped making homogenous cluster. Following the decision criteria, five clusters of 12 items each were formed. On the basis of item, these clusters were named 1. Self Awareness, 2. Self Regulation, 3. Motivation, 4. Empathy, and 5. Social Skill.

In the self awareness cluster, only one item had a mean of 4.06 and SD of .73 on the five point scale, thus suggesting that item had received highest rating. Observation of variance of others items suggested that variance of this item was not the lowest as well as it was not an outlier. Dropping of this item also reduced the alpha reliability to .68. Thus we decided to retain the item. Table 1 also suggests that dropping of any one item reduced the alpha, thus the cluster of 12 items had been retained. The alpha reliability of scale was .71 thus within acceptable limit according to Nunnaly' criteria.

Self Regulation cluster displayed a better reliability coefficient. The cluster showed a relatively better item-to-total-correlation where the lowest item-to-total correlation is .41 and average item-to-total correlation is .49. All items contributed positively to the reliability as dropping of any item reduced the alpha coefficient. The alpha reliability of the scale was .83.

Motivation cluster received the highest rating by managers five of the twelve items had a mean score of more than 4 on a 5-point scale. Average item-to-total correlation for the scale was .44 and the alpha reliability was .80.

Empathy dimension revealed a more balanced response with item mean ranging between 3.14 and 3.94. All items contributed positively towards reliability as dropping of any item had a depressing effect on alpha

reliability of the scale. Average item-to-total correlation was .48 and the alpha reliability was .83.

Social skills cluster again had a balanced mean rating with item mean ranging between 3.30 and 3.89. This scale revealed relatively higher internal consistency and higher average item-to-total correlation as the average item-to-total correlation was. 56 alpha reliability was. 87.

Among the clusters, motivation cluster has showed highest mean suggesting highest degree of motivation among managers (Table 1). In terms of Intra-personal and Interpersonal competencies, people rated themselves higher on intra-personal competencies: motivation, self awareness and self regulation than on interpersonal competencies, namely empathy and social skills.

The trend suggests people's energies more invested in issues where they see their full control rather than where they need to deal with people out there. Alpha reliability of social skill was highest, followed by regulation, Empathy/Social Awareness. Self Awareness has a lowest alpha reliability. Even in the case ECI (Hay Group, 2002) self-rated intrapersonal competencies had relatively lower reliabilities as compared interpersonal dimensions. Correlations among the dimensions of EI also suggest that dimensions of EI are significantly and positively inter-correlated implying that these competencies vary together.

Table 2 reveals that self awareness is having relatively higher correlation with emotional expression

as compared to correlation with commitment and QWL. The results are in expected line that emotionally self aware persons will also be comfortable in expressing emotions. Other dimensions of EI are also positively related with emotional expression, suggesting that self regulation, motivation, empathy and social skills also contribute to emotional expression. Similarly organizational commitment and quality of life are also positively related to all the EI dimensions.

Results are encouraging and provide enough indication towards reliability and the concurrent validity of the scales. The present measure of EQ Questionnaire inches one step in the direction of providing an indigenous measure. The measure to begin with can be used for exploratory studies and data generated though this questionnaire may be used for self reflection and counselling. The instrument may be used in future researches to examine its relationship with other constructs and on other professionals groups like doctors, nurses, legal advisors, insurance sales professionals teaches. etc. This questionnaire is still not robust enough to be used for selection or promotion decision. Further a word of caution is warranted that conclusions drawn are on the basis of self report data. More validity studies are needed, particularly for establishing discriminate validity. Use of three sixty degree feedback for assessing EI may also be undertaken in future researches.

Table 1

Mean, SD and Standardized Alpha Reliabilities of Emotional Intelligence Dimensions

S.No.	Dimensions of EI	Range	Mean	SD	1	2	3	4	5
1.	Self-Awareness	12-60	44.80	4.93	(.71)				
2.	Self-Regulation	12-60	44.56	6.03	.56	(.83)			
3.	Motivation	12-60	46.53	5.47	.61	.64	(.80)		
4.	Empathy	12-60	43.80	6.08	.51	.63	.65	(.83)	
5.	Social Skills	12-60	43.48	6.65	.52	.59	.62	.68	(.87)

Table 2

Relationship between Emotional Intelligence Dimensions and Certain Criterion Variables

S. No.	Dimensions of EI	Emotional Expression r (N=263)	Commitment r (N=263)	QWL r (N=240)
1.	Self-Awareness	.55	.39	.18
2.	Self-Regulation	.43	.48	.36
3.	Motivation	.43	.80	.20
4.	Empathy	.35	.51	.23
5.	Social Skills	.41	.42	.26

All correlations are significant at $p < .01$

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Appendix-A

Self Awareness

- I am able to identify my feelings.
- I have learned a lot about myself through my feeling and emotions.
- I understand the reasons for my 'moods'.
- I am clearly able to see how my feelings impact my performance.
- My values and goals are very clear in my mind.
- I am aware of my strengths and weaknesses.
- I frequently seek feedback on my behaviour/performance.
- I have full confidence in myself and in my decisions.
- I take initiative to meet people in social situation.
- When I contribute to group discussions I believe my contributions are as valuable as those of others.
- If I am convinced that my position is right, I prefer to maintain my position, even if it means becoming unpopular.
- I am clear what I want from life.

Self Regulation

- I can achieve what I want through my determination.
- I don't easily give up even if I received set backs.
- When I have a problem that creates undue tension, I try to relax and gain a feeling of tranquillity so that I can re-evaluate things.
- When I face a problem I focus on what I can do to solve it.
- I can adjust very quickly to new challenges, problem and information.
- I am sensitive to the development in the environment and capture the opportunity there.
- I am able to anticipate changes, and I plan in advance to encash the opportunities.
- I am able to handle multiple demands and rapid changes.

- I am quite flexible in my approach to life and problems.
- I can frequently anticipate solutions to my problems.
- When a certain approach to a problem does not work, I can quickly re-orient my thinking.
- I seek out fresh ideas from a wide variety of sources.

Motivation

- I constantly try to improve my performance.
- I Set challenging goals for myself and strive to achieve them.
- I work hard for a 'better' future reward rather than accept a lesser reward now.
- I constantly scan the environment to seize any new opportunity.
- I prefer to proact.
- I mobilize others through unusual, enterprising effort.
- I take initiative to start dialogue for a new adventure.
- I prefer to be idea leader.
- I believe in performance rather than just following the rules.
- I believe where there is a will there is a way.
- I start any activity with the firm determination to complete it.
- Under pressure, I am confident I will find the way.

Social Awareness

- People don't have to tell me what they feel; I can sense it.
- I can sense the pulse of others and state unspoken feelings.
- I listen to the feelings of people while they are talking.
- I can sense the feelings of people when I walk into a room.

- I anticipate people's need and try to satisfy them.
- I try to understand and meet the expectations of people.
- I seek information about people's need and then provide service accordingly.
- I take initiative in talking to people in order to serve them better.
- I am very comfortable in working with people of different background.
- I am able to identify who has real power in the group/organization.
- I am able to relate well with people who matter in the organizational dynamics.
- I am able to influence the opinion of important people.

Social Skills

- I am able to convince people.
- I present myself in such a way that people get impressed.
- I keep my knowledge base updated and influence people through that.
- I am able to read the needs of the hour and influence people through my initiative.
- I am a good communicator.
- I am able to put across my messages effectively
- I use a variety of medium of communication to get the desired response.
- I am able to arouse enthusiasm in people.
- I emerge as a natural leader during unstructured situation.
- I recognise the need for change and work for removing the barriers.
- I create such an atmosphere where people enthusiastically interact and participate in the teamwork.
- I build team identity and promote commitment among team members.