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## Emotional Intelligence Inventory: Construction and Standardisation

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### **Abstract:**

*The paper reports about the construction and standardization of Emotional Intelligence Inventory. The inventory consists of 85 items out of which 58 were positive statements and 27 were negative statements. The items measure nine factors related to emotional intelligence as given in the E. I model given by, Goleman. All the nine factors have positive correlation. The Inventory was specially designed for higher secondary school children and was administered on a sample of 210 students. Reliability was established by Split-Half reliability technique. Split-Half reliability by odd even method was found to be  $r = .81$  and by upper half and lower half was found to be  $r = .83$ . For validity face, content and construct validity was found and the test developed was found to be valid.*

**Keywords:** Emotional Intelligence

### **1. Introduction**

Intelligence theories during the last century focused mainly on cognitive abilities, with only a minimal emphasis on non-cognitive processes. However the EQ concept argues that IQ, or conventional intelligence, is too narrow; there are wider areas of emotional intelligence that dictate and enable how successful we are. Success requires more than IQ (Intelligence Quotient), which was supposed to be the traditional measure of intelligence. We've all met people who are academically brilliant and yet are socially and inter-personally inept and we know that despite possessing a high IQ rating, success does not automatically follow. This is the essential premise of EQ -- to be successful requires effective awareness, control and management of one's own emotions and those of other people. To exhibit emotions is very easy but doing it at the right time, at the right place, with the right person and to the right degree is difficult. The management of emotions has given rise to the most talked about term, Emotional Intelligence. Emotional Intelligence is a person's ability to deal with his or her own emotions and the emotions of others in a constructive manner such that it produces team work and productivity rather than conflict.

E.L. Thorndike, an American educational psychologist in (1920) gave the concept of social intelligence and defined it as "the ability to understand and manage men, women, boys, and girls to act wisely in human relations" (p. 228).

Howard Gardner (1983) in his book "Frames of Mind: The Theory of Multiple Intelligences" introduced the concept of multiple intelligences. In this book he described seven different intelligences including:

1. Linguistic
2. Logical Mathematical
3. Musical
4. Bodily Kinesthetic
5. Spatial
6. Interpersonal intelligence - the capacity to understand the intentions, motivations and desires of other people
7. Intrapersonal intelligence - the capacity to understand yourself, to appreciate feelings, fears and motivations.

Gardner's 6 and 7 intelligences were later combined into the study of "emotional intelligence".

Peter Salovey a professor of psychology from Yale University and John Mayer also a professor of psychology from the University of Hampshire, introduced the concept of, *Emotional Intelligence* (EI). They presented it as a subset of social intelligence (Salovey and Mayer, 1990) and defined EI as an – "ability to monitor one's own and others' feelings and emotions, to discriminate among them and use this information to guide one's thinking and action". Mayer and Salovey's explains emotional intelligence as a cognitive ability and presents the four levels through which a person becomes emotionally intelligent.

- Emotional Perception: emotional perception is an ability to be self-aware of emotions and to express them accurately.
- Emotional Assimilation: ability to distinguish between the different emotions one is undergoing and also identify those emotions that affect ones thought process.
- Emotional Understanding: ability to understand complex emotions and also to recognize the transition from one emotion to another.

- Emotional Management: ability to think, analyze and behave rationally in any situation. The emotionally intelligent person can harness emotions, even negative ones, and manage them to achieve intended goals.

Dr. Reuven Bar-On’s coined the term Emotional Quotient (EQ) in 1985. This term was used to focus on the emotional, social and personal aspects of intelligence and gave the second model of emotional intelligence which assesses emotional and social competence. He posits that emotional intelligence can be learned and developed over a period of time through training, programming and therapy (Stys and Brown, 2004). Bar-On’s (2006) model outlines five components which are further classified into fifteen subcomponents.

- Intrapersonal: Self Regard, Emotional Self-Awareness, Assertiveness, Independence, and Self-Actualization.
- Interpersonal: Empathy, Social Responsibility and Interpersonal Relationship
- Adaptability: Reality Testing, Flexibility and Problem Solving
- Stress Management: Stress Tolerance and Impulse Control
- General Mood Components: Optimism and Happiness

Bar-On (1997) theorized that emotionally intelligent people “are generally optimistic, flexible, realistic, and successful at solving problems and coping with stress, without losing control”

He believes that individuals with higher emotional quotient (EQ) are more competent in coping with demands, challenges and pressures of everyday life. He created the Bar-On *Emotional Quotient Inventory* and focuses on measuring one’s ability to cope with environmental demands and pressures (Bar-On, 2002), rather than personality traits or his cognitive capabilities

The third model which is the mixed model is given by Daniel Goleman. According to Goleman EI consisted of five domains, or dimensions, of emotional intelligence comprising of twenty-five competencies. Three dimensions—Self-Awareness, Self-Regulation, and Motivation—described as *personal competencies*, that is, knowing and managing emotions in one-self. Two dimensions—Empathy and Social Skills—described as *social competencies*, that is, knowing and managing emotions in others

However Goleman revised his 1998 model and in 2001 he gave his revised model:

Goleman’s (2001) Emotional Intelligence competencies

	<b>Self</b>	<b>Other</b>
	Personal competence	Social competence
<b>Recognition</b>	<b>Self-Awareness</b> - Emotional self-awareness - Accurate self-assessment - Self-confidence	<b>Social Awareness</b> Empathy - Service orientation - Organizational awareness
<b>Regulation</b>	<b>Self-Management</b> - Self-control - Trustworthiness - Conscientiousness - Adaptability - Achievement drive - Initiative	<b>Relationship Management</b> - Developing others - Influence - Communication - Conflict management - Leadership - Change catalyst - Building bonds - Teamwork & collaboration

*1.1. Measuring Emotional Intelligence*

There are quite a few scales of emotional intelligence developed by investigators both in India and foreign conditions to measure emotional intelligence for different age groups. Since Emotional Intelligence is an emerging field the investigator felt the need to construct a scale with items suitable to measure emotional intelligence specially for Higher Secondary School students. The items in the test are an ability measure of intelligence rather than self-report measure they do not reflect cognitive abilities but rather self-perceived abilities and behavioural dispositions. Statements using simple wording and syntactic style are used. The inventory consists of 85 short statements measuring different traits: Self Awareness, Trustworthiness, Adaptability, Emotional Self-Control, Empathy, Interpersonal Communication /Interpersonal Influence, Initiative/Achievement Drive, Managing Relations and Optimism. Items are rated on 5-point response scale with a response format ranging from "Almost Never, Rarely, Seldom, Usually to Almost Always .The tool uses both positive and negative statements under all the traits measured to add variety and to reduce student’s tendency to respond perfunctorily. It will also help in better interpretation and for exhaustive coverage of all dimensions. For positive items the scoring is 1,2,3,4,5 and is reserved for negative items 5,4,3,2,1.

## 1.2. Definition of the Factors

### 1.2.1. Self-Awareness

Self-Awareness is self-insight and self-understanding, it means to know ones emotions, strengths, weakness, drives, values and goals and recognize their impact on others. Knowing what we feel in the moment and using that to guide our decision making; having a realistic assessment of our own abilities and a well-grounded sense of self-confidence. It involves;

- Emotional self-awareness Reading one's own emotions and recognizing their impact: using "inner-sense" to guide decisions.
- Accurate self-assessment: Knowing one's strengths and limits.
- Self-confidence: Having a sound sense of one's self-worth and capabilities.

The correlation of this factor with the total score is .725.

### 1.2.2. Trustworthiness

This competence translates into letting others know one's values and principles, intentions and feelings, and acting in ways that are consistent with them. Trustworthy individuals are forthright about their own mistakes and confront others about their lapses. The correlation of this factor with the total score is .485.

### 1.2.3. Adaptability

They are open to new information and can let go of old assumptions and so adapt how they operate. Emotional resilience allows an individual to remain comfortable with the anxiety that often accompanies uncertainty and to think differently displaying creativity and applying new ideas to achieve results. Conversely, people who are uncomfortable with risk can undermine innovative ideas or be slow to respond to changes. The correlation of this factor with the total score is .659.

### 1.2.4. Emotional Self Control

It manifests largely as the absence of distress and disruptive feelings. Signs of this competence include being unfazed in stressful situations or dealing with a hostile person without lashing out in return. They have a stronger sense of control not only over them but the events in their life as such do not become angry or depressed when faced with stress or by provocation of students and others that they come across in school. The correlation of this factor with the total score is .663.

### 1.2.5. Empathy

Sensing others emotions, understanding their perspectives, and taking active interest in their concerns, this competence gives people an astute awareness of others' emotions, concerns, and needs. The empathic individual can read emotional currents, picking up on nonverbal cues such as tone of voice or facial expression. Empathy requires our understanding of others' feelings and concerns flows from awareness of our own feelings. It allows us to read people accurately and tend to be opinionated and argumentative. The correlation of this factor with the total score is .720.

### 1.2.6. Interpersonal Communication /Interpersonal Influence

Communication competence means to be effective in the give-and-take of emotional information, deal with difficult issues straightforwardly, listen well and welcome sharing information fully, and foster open communication and stay receptive to bad news as well as good. This competence builds on both managing one's own emotions and empathy; a healthy dialogue depends on being attuned to others' emotional states and controlling the impulse to respond in ways that might sour the emotional climate.

Influence competence means to handle and manage emotions effectively in other people and are persuasive. The most effective people sense others' reactions and fine-tune their own responses to move interaction in the best direction. Children with this competence draw on a wider range of persuasion strategies than others do, including impression management, dramatic arguments or social actions, and appeals to reason. At the same time, the Influence competence requires them to be genuine and put collective goals before their self-interests; otherwise what would manifest as effective persuasion may appear as manipulation. The correlation of this factor with the total score is .693.

### 1.2.7. Initiative/Achievement Drive

This often means taking anticipatory action to avoid problems before they happen or taking advantage of opportunities before they are visible to anyone else. Individuals who lack Initiative are reactive rather than proactive, lacking the farsightedness that can make the critical difference between a wise decision and a poor one. Initiative is key to outstanding performance and to the development of personal relationships with students.

Achievement Drive means striving to improve or meet a standard of excellence. People with this competence are results-oriented, with a high drive to meet their objectives and standards; Set challenging goals and take calculated risks, pursue information to reduce uncertainty and find ways to do better. They learn to improve their performance and have an optimistic striving to continuously improve performance. They support enterprising innovations and set challenging goals for themselves, and so forth. Spencer and Spencer (1993) found that the need to achieve is the competence that most strongly sets apart superior and average students. Optimism

is a key ingredient of achievement because it can determine one's reaction to unfavorable events or circumstances; those with high achievement are proactive and persistent, have an optimistic attitude toward setbacks, and operate from hope of success. The correlation of this factor with the total score is .594

#### 1.2.8. Managing Relations

Handling emotions in relationships well and accurately reading social situations; interacting smoothly; using these skills to persuade, lead and negotiate. Relationship management allows you to connect with others in ways that help them feel understood and supported. It is an essential emotional intelligence skill that enables you to effectively lead change or manage personal change. It is much more than being friendly. It takes effort and intention (and some strategy) to get the best from a situation and manage the way through which people respond. The correlation of this factor with the total score is .591.

#### 1.2.9. Optimism

Persistence in seeking goals despite obstacles and setbacks. Operate from hope of success rather than fear of failure, they have a hope that future will be better than past and they see setbacks due to manageable circumstances rather than personal flaws. The correlation of this factor with the total score is .743.

#### 1.2.10. Objective

The objective of the present study was to construct and standardize scale for measurement of Emotional Intelligence of school students (adolescent group).

#### 1.2.11. Development and Standardization of a Tool

Standardized tests are constructed by an individual or by a group of individuals and are being processed and universalized for all situations and for all the purposes. They are carefully constructed tests having uniformity of procedure in scoring, administering and interpreting the test results.

### **2. Pooling of Items**

The items for the construction of the test were pooled from various sources including Psychological tests of various types that are standardized on the basis of the performance of a representative population; and an individual's rating is determined by the relationship of his performance to that group as a whole. Self-knowledge of the test constructor along with the expert views of the eminent test constructors from the said field have also been taken into consideration. International Online Library namely "Questia" was consulted as it provided a systematic guide and introduced the investigators with relevant Library sources, tools and services offered along the way.

- Target Population: This tool is designed to study emotional intelligence of adolescents studying in class IX to XII i.e. Secondary and Higher Secondary School students<sup>1</sup> of Kashmir.<sup>2</sup>
- Type of Test Items: Emotional Intelligence scale is a Likert type<sup>3</sup> five point scale. Every item is in the form of a statement including both positive and negative statements. This is done with the intent to add variety. With each statement, five response categories were provided alongside. These categories range from almost never, rarely, seldom, usually to almost always. The subject is required to select the most appropriate response indicating his/her preference to the given statement.
- Preparation of Preliminary Draft: While preparing the preliminary draft of the scale, review of related literature along with the Psychological tests available were consulted. On the basis of the information collected, a list of eighty-five statements distributed over nine dimensions was pooled. The factor wise distribution of statements in emotional intelligence is given as under:

<sup>1</sup> Different Stages of Education in the present study has been taken according to the Indian Education Commission (1964-66). According to Indian Education Commission (1964-66), School Education comprises of following stages: Primary Stage (I-VIII), Lower Primary (I-V), Upper Primary (VI-VIII), Secondary Stage (IX-X) and Higher Secondary Stage (XI-XII). Secondary school students are of ages fourteen to fifteen and higher secondary school students are of ages sixteen to seventeen years.

<sup>2</sup> (Jammu and Kashmir State came into existence in 1846, after the first Anglo-Sikh war of 1845-46, with Maharaja Ghulab Singh as its first ruler. Until then, there was no such distinct political entity. The State was not the personal creation of Ghulab Singh but was rather the outcome of an agreement between him and the representatives of the British East India Company.) Jammu & Kashmir consist of three divisions: Jammu, Kashmir & Ladakh.

<sup>3</sup> Likert type scale take much less time to construct, it offers an interesting possibility for the student of opinion research. Likert Method can be performed without a panel of judges. The attitude or opinion scale may be analyzed in several ways. The simplest way to describe opinion is to indicate percentage responses for each individual statement.

Symbol	Factors	Item wise serial number	Total Items	Positive Items	Negative Items
A	Self-Awareness	10,12,15,18,19,23,25,30,38,45,47	11	7	4
B	Trustworthiness	2,5,31,38,65,82	6	4	2
C	Adaptability	7,13,26,28,35,43,62,67,80	9	6	3
D	Emotional Self-Control	6,8,11,14,27,34,52,54,61,70,74,78,81	13	9	4
E	Empathy	22,24,36,39,51,69,73,79	8	6	2
F	Interpersonal Communication/Interpersonal Influence	1,3,17,20,41,55,56,57,59,60,72,75	12	8	4
G	Initiative / Achievement Drive	4,9,29,32,42,46,48,49,63,64	10	7	3
H	Managing Relations	44,50,58,66,71,76,83,84,85	9	6	3
I	Optimism	16,21,33,37,53,68,77	7	5	2
		TOTAL	85	58	27

Table 1 : Showing Factor wise distribution of statements

These 85 items were provided with 5 response categories namely; “Almost Never”, “Rarely”, “Sometimes”, “Usually” and “Almost Always”. The preliminary draft was administered to 20 adolescents studying in Govt. Girls Higher Secondary School Kothibagh and Amirakadal.<sup>4</sup>

### 2.1. The Try Out

The 85 statements were standardized and were provided with standard instructions and administered on a sample of 210 Higher Secondary School Students from both government<sup>5</sup> and private<sup>6</sup> schools of Srinagar. Random Sampling<sup>7</sup> was used to select the students from different schools. Regarding the administration of emotional intelligence inventory (self-administering test), the test was administered individually to each student. Each student is required to fill in the personal information given at the start of the inventory. Formal instructions for the test takers are given at the beginning of the inventory. The testee reads the instructions and starts to register his/her responses to various items of the test. There is no time limit to complete the test but usually the test takers take 20 to 30 minutes to complete the test. Special care was taken to avoid any omission on the part of the testee.

**Scoring:** The test measured emotional intelligence with respect to different dimensions (nine) and each dimension had both positive and negative statements. The summary of the nine dimensions along with the positive and negative statements is given in the Table 1. The scoring for the different response categories according to the positive and negative statements is given in the Table 2.

Response Category	Positive Scale Value	Negative Scale Value
Almost Never	5	1
Rarely	4	2
Sometimes	3	3
Usually	2	4
Almost Always	1	5

Table 2: Showing scoring for positive and negative statements

### 2.2. Item Analysis

The preliminary draft consisting of 85 items was administered to 210 school students (Secondary and Higher Secondary Schools). This being a Likert type scale, the subject is supposed to indicate their response on the scale (5-point), with scale points ranging from almost never to almost always. The questionnaires were scored and items were analyzed employing t- value method. The method involves calculation of t values for the difference between the means of high (upper 27 per cent on the basis of total score) and low (lower 27 per cent on the basis of the total score) groups for each factor. Then the factor wise Standard Deviation of high group and low group was computed and then t-test was applied in order to find out the difference between the two groups.

<sup>4</sup> Government Girls Higher Secondary School Kothi Bagh and Amirakadal are located in Srinagar district of Jammu and Kashmir.

<sup>5</sup> According to the Jammu and Kashmir School Education Act, 2002, “Government School” means a school run by the Education Department of the Government of Jammu and Kashmir.

<sup>6</sup> According to Jammu and Kashmir School Education Act, 2002, “Private School” means a school established, run or maintained by any educational agency and recognized by the Government. Also there are private aided and private un-aided schools. “Private Aided Schools” which according to the Jammu and Kashmir School Education Act, 2002 means the private school which is recognized and is, or has been, receiving Grant-in-Aid from the Government.

<sup>7</sup> The individual observations or individuals are chosen in such a way that each has an equal and independent chance of being selected.

3. Factors Showing High Score (Upper27%) and Low Score (Lower 27%) on E.I.I

FACTORS	A	B	C	D	E	F	G	H	I	total
HIGH SCORE	48	26	38	53	35.	51	43	40	32	352
SD	2.26	1.402	2.225	2.744	3.53202	3.165	2.355127	2.085	2.675	14.063
LOW SCORE	34	19	26	36	23	35	31	27	21	275
SD	2.38	1.457	2.768	2.928	2.427	3.313	3.870	3.086	2.248	17.733

Table 3: Showing High Score and Low Score on E.I.I.

**Reliability of the test:** Reliability was established by Split-Half reliability<sup>8</sup> technique. Split-Half reliability by odd even method was found to be  $r = .81$  and by upper half and lower half was found to be  $r = .83$

**Validity:** Validity<sup>9</sup> was found by using face and content validity. Content validation was achieved by screening which was done by ten experts and ten peers from the field of education. On the basis of the responses Index of Suitability (IOS) was calculated and the value of IOS ranged from .85 to 01 which clearly showed that the content of the emotional intelligence measures the same traits which they were supposed to measure. On the basis of the data analyzed, Construct Validity of the Emotional Intelligence Inventory reveals that there is a positive and significant correlation between the nine factors used for measuring E.I. The calculated t-value tabulated in table no.03 by Spearman's Method and Table 4 by Pearson's Method shows that the test developed is significant at .01 Level of Significance. Thus it can be inferred that all items are highly correlated and the test developed is significant.

4. Table Showing Interrelationships between Different Domains of Emotional Intelligence Inventory. (Correlation Matrix)

Correlations												
		A	B	C	D	E	F	G	H	I	J	
Spearman's rho	A	Correlation Coefficient	1.000	.325**	.355**	.383**	.460**	.542**	.329**	.427**	.514**	.725**
		Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000
		N		241	241	241	241	241	241	241	241	241
	B	Correlation Coefficient		1.000	.275**	.289**	.334**	.308**	.279**	.199**	.308**	.485**
		Sig. (2-tailed)			.000	.000	.000	.000	.000	.002	.000	.000
		N			241	241	241	241	241	241	241	241
	C	Correlation Coefficient			1.000	.425**	.546**	.403**	.308**	.252**	.418**	.659**
		Sig. (2-tailed)				.000	.000	.000	.000	.000	.000	.000
		N				241	241	241	241	241	241	241
	D	Correlation Coefficient				1.000	.401**	.340**	.333**	.278**	.459**	.663**
		Sig. (2-tailed)					.000	.000	.000	.000	.000	.000
		N					241	241	241	241	241	241
	E	Correlation Coefficient					1.000	.406**	.389**	.387**	.400**	.720**
		Sig. (2-tailed)						.000	.000	.000	.000	.000
		N						241	241	241	241	241
	F	Correlation Coefficient						1.000	.346**	.334**	.534**	.693**
		Sig. (2-tailed)							.000	.000	.000	.000
		N							241	241	241	241
	G	Correlation Coefficient							1.000	.378**	.396**	.594**
		Sig. (2-tailed)								.000	.000	.000
		N								241	241	241
	H	Correlation Coefficient								1.000	.406**	.591**
		Sig. (2-tailed)									.000	.000
		N									241	241
	I	Correlation Coefficient									1.000	.743**
		Sig. (2-tailed)										.000
		N										241
	J	Correlation Coefficient										1.000
		Sig. (2-tailed)										
		N										

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 4: Showing correlation by Spearman's Method

<sup>8</sup> Two scores are obtained for each person by dividing the test into two equivalent halves. The test can be divided in different ways, most commonly scores of odd and even items of the test are calculated or else scores of one or the other half but maintaining the similarity of the two half scores.

<sup>9</sup> Validity of the test concerns what the test measures and how well it does so. Validity must be established with reference to the particular use for which the test is being considered.

		Correlations									
		A	B	C	D	E	F	G	H	I	J
A	Pearson Correlation	1	.367**	.426**	.407**	.450**	.558**	.334**	.446**	.523**	.753**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N		241	241	241	241	241	241	241	241	241
B	Pearson Correlation		1	.309**	.298**	.350**	.356**	.325**	.182**	.309**	.526**
	Sig. (2-tailed)			.000	.000	.000	.000	.000	.005	.000	.000
	N			241	241	241	241	241	241	241	241
C	Pearson Correlation			1	.418**	.581**	.423**	.299**	.281**	.443**	.690**
	Sig. (2-tailed)				.000	.000	.000	.000	.000	.000	.000
	N				241	241	241	241	241	241	241
D	Pearson Correlation				1	.379**	.363**	.304**	.318**	.405**	.667**
	Sig. (2-tailed)					.000	.000	.000	.000	.000	.000
	N					241	241	241	241	241	241
E	Pearson Correlation					1	.404**	.347**	.364**	.402**	.701**
	Sig. (2-tailed)						.000	.000	.000	.000	.000
	N						241	241	241	241	241
F	Pearson Correlation						1	.358**	.366**	.552**	.744**
	Sig. (2-tailed)							.000	.000	.000	.000
	N							241	241	241	241
G	Pearson Correlation							1	.361**	.344**	.600**
	Sig. (2-tailed)								.000	.000	.000
	N								241	241	241
H	Pearson Correlation								1	.380**	.617**
	Sig. (2-tailed)									.000	.000
	N									241	241
I	Pearson Correlation									1	.720**
	Sig. (2-tailed)										.000
	N										241
J	Pearson Correlation										1
	Sig. (2-tailed)										
	N										

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 5: Showing correlation by Pearson’s Method.

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