



## Development and Validation of Emotional Intelligence Inventory (EII) for Secondary School Students

### KEYWORDS

Emotional Intelligence Inventory, Validity, Reliability

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### ABSTRACT

*This paper describes the development of the Emotional intelligence Inventory (EII) in Bengali version as tested on 800 respondents. The understanding of emotional intelligence as reflected in the definition of Goleman (2002) offers the possibility to derive an empirical questionnaire of EII. In this article, development of EII has been presented by describing the operationalization process and then will be validated through a series of studies. Norm of the inventory was determined after administration of 800 secondary school students. It is also validated by comparing it with Mangal's Emotional Intelligence Inventory. The scale is found to be performs exceptionally well as a general measure of emotional intelligence with acceptable internal consistency and construct validity.*

### Introduction

According to Mayer and Salovey (1990), Emotional intelligence is the ability to monitor one's own and others feeling and emotions, to discriminate among them and to use this information to guide one's thinking and action. Daniel Goleman (1995), defined emotional intelligence as the capacity for recognizing our own feeling and those of others, for motivating ourselves and for managing emotions effectively in others and ourselves.

Thus we can say that emotional intelligence encompasses social intelligence and emphasizes the affect of emotions on our ability to view situations objectively and thus to understand ourselves and other people. It is the ability to sense, understand, and effectively apply the power of emotions, appropriately channeled as a source of energy, creativity and influence. It includes a person's ability to understand their own emotions and those of others, and to act appropriately using these emotions.

Self-report trait measures of Emotional Intelligence (EI) are very popular among researchers (Petrides & Furnham, 2001). Most of the measures have been developed in America, so there is a need to develop EI measures in other parts of the World as well. There is various ways in dealing with emotions in Eastern (collectivistic) and Western (individualistic) cultures. In collectivistic cultures people are low in self disclosure and expression of emotions in order to keep the well-being of the group intact, while members of individualistic cultures express their emotions to help them out even if the outlet involves negative emotions toward others (Keiko, Ohara, Antonucci, & Akiyama, 2002; Mesquita, 2001; Niedenthal, Krauth-Gruber, & Ric, 2006). So, it needs to be studied in different cultures with respect to their environment, language, traditions and ways of upbringing of individuals as it is a culturally learned trait (MacCann, Matthews, Zeidner, and Roberts 2004).

Keeping in view the importance of emotional intelligence, inappropriateness of administration of existing measures of EI on Indian population, and scarcity of work on scale development in India, the present study was planned to develop and validate the Emotional Intelligence Inventory (EII) in Indian cultural context.

### Sample for the Study:

The present study involves 800 students of secondary school

students from rural and urban areas of Purulia district, West Bengal. The sample is selected by using random sampling procedure. The sample is selected from 20 schools out of which 12 from rural area and 8 from urban area with age ranges from 14-18 years. Based on the theory of Goleman's Emotional Intelligence and Goleman's model of Emotional Intelligence (2002) the present study is stated and investigator has constructed emotional intelligence scale meant for secondary school students.

### Construction of Emotional Intelligence Inventory (EII)

Many of the procedures that we are discussing are traditionally described as the theoretical—rational and deductive method of scale development. We consider this approach to be an important initial step in a more extensive process rather than a scale development method to be used by itself. The steps are :

**Creation of pool of items:** The creation of the initial pool is a crucial stage in scale construction. The fundamental goal at this stage is to collect items systematically from all the contents that is potentially relevant to the target construct. Starting from the definition of emotional intelligence and from the review of the literature dealing with emotional intelligence and emotion management, an initial pool of 230 items was retrieved. For doing so, the investigator made through consultation of a wide variety of sources like authoritative and authentic books, research literatures, journals and periodicals and other resourceful literature related to the concept of emotional intelligence and its parameters namely self-awareness, self management, social awareness and relationship management (Golman, 2002). The investigators carefully examined the definition of each competence and generated a large item pool of 200 items that are related to these competencies.

**Editing of items:** This step focused on the extent to which the items could address parts of the definition of emotional intelligence dimensions. Those items that did not fit well were deleted. Five experts in the field of psychology were given the initial pool of items. Along with this, Goleman's definition of Emotional Intelligence and a brief note on emotional competence frame work were also supplied to the experts for the purpose of reference. The items which were considered by experts as ambiguous, abstract, complex, difficult terminology were discarded. 46 items are thus discarded. After consensus, 154 items were selected on the basis of clarity,

redundancy and comprehensibility.

**Scoring pattern :** The preliminary pool of remaining items 154 were printed in the form of a self-report questionnaire with a three point scale (Table 1) against each item.

**Table 1 Point distribution of EII at five point scale**

Statement	Agree	Undecided	Disagree
Positive	2	1	0
Negative	0	1	2

**Try out :** The Emotional Intelligence scale was administered to a represented sample (N=300) consisting of secondary school students with age ranging from 12 to 18 years. The students were asked to indicate their response to each statement by encircling one of the categories of agree or disagree using a five point scale as stated above.

**Item Analysis:** Each item of the scale was scored using the above scoring key. The answer sheets were arranged in the descending order based on total scores. From the 300 answer sheets, the top 25% (top 75 answer sheets) and the bottom 25% (bottom 75 answer sheets) were used for item selection. The 't' value was calculated through SPSS. Those items having 't' values more than 1.75 were selected for the final scale (Edward 1975). At last with the exclusion of 54 items still 100 items were there. Thus the final form of the EII consisted of 100 items.

**Final Version of EII:** The final EII was administrated on a sample of 800 secondary school students and the scores were used for the purpose of developing norms, estimating the validity of the scale and for estimating the reliability of the scale. The responses obtained from the pilot testing are used in item analysis. It can be observed from the above table that the calculated value of correlating coefficients for every items of emotional intelligence which were found to be significant at 0.01 level of significance.

**Validity of the Scale:** The validity of self-estimated subjective phenomena is relative and cannot be assessed absolutely. The validity of a scale is study specific, and must be considered each time the scale is chosen for a new study. Therefore there are various concepts of validity, each addressing a specific type of quality assessment. The main concepts are construct and concurrent validity, but a large number of sub concepts are used.

(a) Construct validity: Cronbach and Meehl (1955) argued that investigating the construct validity of a measure necessarily involves at least the following three steps: (a) articulating a set of theoretical concepts and their interrelations, (b) developing ways to measure the hypothetical constructs proposed by the theory, and (c) empirically testing the hypothesized relations among constructs and their observable manifestations. To articulate the basic construct a review have been made to see how others have approached the same problem. Initially, the review should include previous attempts to conceptualize and assess both the same construct and closely related constructs. Emotional Intelligence Inventory (EII) for secondary school students has four dimensions namely self-awareness, self management, social awareness and relationship management (Golman, 2002) which are found to be significantly interrelated each other. It is also evident from the assessment of judges that the items of the scale are directly related to the concept of emotional intelligence.

(b) Concurrent validity: The concurrent validity is often quantified by the correlation coefficient between the two sets of measurements obtained for the same target population - the measurements performed by the evaluating instrument and by the standard instrument. For this study our inventory has

been correlated with Mangal's Emotional Intelligence Inventory. The co-efficient of correlation between these two inventories were found to be 0.81. This indicates that our scale is valid.

**Internal consistency:** Internal consistency refers to the overall degree to which the items that make up a scale are inter correlated. This is estimated by an index such as coefficient alpha (Cronbach, 1951). From a more academic perspective, it represents the ratio of true score variance to total variance (Lord and Novick, 1968). Rather, internal consistency represents the percentage of variance within a group of scores that is reliable variance, in contrast to error variance. Cronbach's alpha estimates almost always range from 0.0 to 1.0, although in particularly poorly assembled scales, the estimate may be negative. Thus, a Cronbach's alpha estimate of 0.50 would indicate that fifty percent of the variance associated with the scores of a scale is reliable. The Cronbach's alpha for this inventory is given in Table 2

**Reliability:** The reliability of the scale was determined by calculating reliability coefficient on a sample of 800 secondary school students. The scale is consisted with four sub scales. Their statistical properties like Cronbach alpha and reliability co-efficient are given in Table 2.

**Table 2 Statistical properties of EII and its subscales**

Sl No	Sub scales	Reliability co-efficient (Guttman's Split half)
1	Self Awareness	0.64
2	Self Management	0.61
3	Social Awareness	0.65
4	Relationship Management	0.67
Overall		0.62

The statistical properties of the scale as found out by Chronbach alpha, split half method (Guttman's) reliability are found to be 0.81 and 0.62 and hence we can definitely say that the tool developed for measurement of Emotional Intelligence is highly reliable.

**Norms of EII:** Norms are average scores computed for a large representative sample of the population. The mean is generally used to judge whether a score on the scale is above or below the average relative to the population of interest. Norm for this inventory was determined following normal distribution theory where Mean  $\pm$  SD gives average score. It is presented at Table 3.

**Table 3. Norm of the EII**

Mean	SD	Score range	Status
117.41	17.17	Below 100	Low emotional intelligent
		100 - 135	Average emotional intelligent
		Above 135	High emotional intelligent

### Conclusion

Despite the limitations, a newly constructed scale appears to have high reliability and validity. The purpose of this study was to develop and validate an Emotional Intelligence Inventory (EII). This study examined the psychometric properties of the EII on a sample 800 secondary school students. The results of the study strongly predicted that the scale performs exceptionally well as a general measure of emotional intelligence with acceptable internal consistency and construct validity.

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