

# Emotional Intelligence: Emotional Expression and Emotional Regulation for Intrinsic and Extrinsic Emotional Satisfaction

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**Purpose:** Theorists have constructed emotional intelligence differently, based on which the literature reveals different diversified scales to measure emotional intelligence. These scales are quite lengthy to respond and have been criticized for producing varying results. The current paper projects the findings of 3 consecutive studies carried out to summarize and simplify the existing models of emotional intelligence and to produce a brief measure in this regard.

**Methods:** Based on the review of the earlier models of emotional intelligence, emotional intelligence was comprehended as an “ability to express and regulate emotions for intrinsic and extrinsic emotional satisfaction”. “Emotional Intelligence Scale (EIS)”, comprising 12 items in English, was developed and validated through principal component analysis, exploratory factor analysis, and confirmatory factor analysis through a series of 3 consecutive studies which involved 1894 participants from Pakistan. The validity of EIS was tested step by step for its face, content, factorial, convergent, and discriminant validity. The reliability was measured through internal consistency and item-total and item-scale correlations.

**Results:** EIS was revealed to be a valid and reliable scale to measure emotional intelligence through 4 core factors, ie, emotional expression, emotional regulation, intrinsic emotional satisfaction, and extrinsic emotional satisfaction. The additional findings revealed significantly higher levels of emotional intelligence among men as compared to women; significantly positive correlation of emotional intelligence with social intelligence, positive emotional effects, age, and education; and a significantly inverse correlation between emotional intelligence and the negative emotional effects.

**Conclusion:** The current paper reported the development and validation of a new scale on emotional intelligence by comprehending and summarizing the earlier models of emotional intelligence.

**Keywords:** emotional intelligence, emotional expression, emotional regulation, intrinsic emotional satisfaction, extrinsic emotional satisfaction

## Plain Language Summary

The current research has associated emotional intelligence with intrinsic and extrinsic satisfaction of a person through developing and validating a new test.

## Introduction

Studying intelligence has been a significant area of research.<sup>1</sup> Earlier researchers have been defining intelligence from different dimensions such as the ability of humans to understand the world,<sup>2</sup> to think and reason,<sup>3,4</sup> to perform goal-oriented tasks,<sup>5</sup> and to produce new products<sup>6</sup> by utilizing different cognitive abilities.<sup>2,4,7-9</sup> Intelligence has been associated with both heredity and environment.<sup>1</sup> Researchers have also tried to typify intelligence into different categories such as analytical intelligence, creative intelligence, practical intelligence,<sup>10</sup> fluid intelligence, crystalized

intelligence,<sup>11–14</sup> linguistic intelligence, logical intelligence, spatial intelligence, musical intelligence, motor ability, interpersonal intelligence, intrapersonal intelligence, and naturalistic intelligence.<sup>15</sup>

Emotional intelligence is another type of intelligence that deals with the recognition, monitoring, and distinction of emotions for the appropriate application of thinking and performing behavior.<sup>16</sup> Emotional intelligence is the ability to recognize and respond to emotions.<sup>17–19</sup> Emotional intelligence has been comprehended and constructed in a quite diversified way by the earlier theorists. Peter Salovey and John Mayer have been regarded as the first who operationally defined emotional intelligence.<sup>20</sup> Emotional intelligence, according to them, is “the ability to recognize, monitor, distinguish, and use one’s own and other people’s emotions as a source of information to direct one’s thinking and actions”. They suggested that emotional intelligence can be categorized into three components, ie, appraisal and expression of emotion, regulation of emotion, and utilization of emotions in solving problems.<sup>20</sup> They also included cognitive components to emotional intelligence later.<sup>21</sup> Goleman focused more on the social and communicational skills involved in emotional intelligence.<sup>19</sup> Cooper and Sawaf proposed a model of emotional intelligence comprising emotional literacy, emotional fitness, emotional depth, and emotional alchemy.<sup>22</sup> Trait Emotional intelligence theory categorized emotional intelligence into seeing, understanding, managing, and employing emotions.<sup>23</sup> The current research reviewed these earlier models of emotional intelligence to retrieve the most common aspects of emotional intelligence through the earlier models. The measurement of emotional intelligence, on the other hand, has also received plenty of criticism because it has been perceived differently as a construct.<sup>24–27</sup> Several instruments have also been developed to measure the construct of emotional intelligence differently. The Toronto Alexithymia Scale<sup>28</sup> comprised 41 items and was intended to measure difficulties in identifying and describing feelings. The Bar-On Emotional Quotient Inventory<sup>29</sup> comprised 133 items and had 15 sub-scales. The Perception of Affect scale<sup>30</sup> was made of 93 items and intended to measure the perception of affect based on body, logic, and evaluation. Schutte Self Report Index<sup>31</sup> was another effort based on Salovey and Mayers’s model<sup>20</sup> and comprised 33 items. Trait Emotional Intelligence Questionnaire<sup>32</sup> comprises 144 items and 15 factors. The Trait Meta Mood Scale<sup>33</sup> was an effort to measure feelings and mode through 48 items. Despite the fact that the construct of emotional intelligence has been defined and analyzed differently, the literature still reveals a great interest of researchers in developing this construct further.<sup>26</sup> Since the researchers acclaim that humans differ in their capacity to process emotions,<sup>34</sup> studying emotional intelligence has been regarded an interesting area of research.<sup>35</sup> Its importance is justified through its role in humans “judgments, decisions, priorities, and actions”<sup>36</sup> as emotions play a vital part in our daily lives.<sup>37</sup> Emotional intelligence has also been positively correlated with happiness<sup>38</sup> and growth<sup>39,40</sup> as well. The current research was another effort to comprehend the construct of emotional intelligence and to come up with a brief scale to measure it. The research is based on three consecutive studies that were carried out one after another to validate the newly developed scale. Emotional intelligence was defined as an “ability to express and regulate emotions for intrinsic and extrinsic emotional satisfaction”. This comprehensive definition is based on a thorough review of the existing literature on emotional intelligence. The definition tries to simplify the construct of emotional intelligence by incorporating all the earlier theoretical frameworks in this regard. The review of earlier literature on emotional intelligence resulted in four common aspects of emotional intelligence that have been proposed diversely by the earlier theorists. These factors include emotional expression, emotional regulation, intrinsic emotional satisfaction, and extrinsic emotional satisfaction. Emotional Intelligence Scale (EIS) that was developed and validated during this research is unique by its composition and simplicity. The earlier scales on emotional intelligence, as discussed above, were quite lengthy and reflected diversified theoretical assumptions. The current research comprehended and summarized the earlier models of emotional intelligence and came up with a very brief and comprehensive tool which will ease the future researchers in studying emotional intelligence.

## Materials and Methods

The current paper presents the findings of 3 consecutive studies which were carried out one after another to validate the scale. Study 1 involved the development and initial validation of the scale through principal component analysis. The scale was further validated in Study 2 by applying exploratory factor analysis. Study 3 was about the confirmatory factor analysis along with establishing the convergent and discriminant validity of the scale.

## Participants

Total participants involved in the entire process were 1894 (study 1 = 500; study 2 = 500; study 3 = 894). These included men ( $n = 720$ ) and women ( $n = 1174$ ) both. The age of the participants ranged between 18 and 77 years with a mean of 21 years. Eighty-six participants were married and 1808 were unmarried. The educational qualifications of the participants ranged between matriculation and PhD. The mean educational qualification of the participants was 13 years of formal education.

## Instruments

Emotional Intelligence Scale (EIS) was developed and validated in the current studies. EIS intends to measure emotional intelligence in adolescents and adults. EIS is developed in English and comprises 12 items. The response sheet involves a 7-point Likert scale ranging from strongly disagree to strongly agree. It has 4 sub-scales labeled as emotional expression, emotional regulation, intrinsic emotional satisfaction, and extrinsic emotional satisfaction. EIS was tested for 3 times and has been found reliable and valid. Emotional Intelligence Measure,<sup>31</sup> Social Intelligence Scale, and the Positive & Negative Affect Schedule<sup>41</sup> were also administered in study 3 to establish the convergent and discriminant validity of the Emotional Intelligence Scale. A Demographic Information Questionnaire was also used to obtain information about participants' gender, age, education, and marital status.

## Procedure

The study was approved by the Departmental Ethic Review Committee of (blinded) university. The data collection process was in accordance with the 1964 Helsinki declaration and its later amendments. The researchers approached the participants of the study individually while visiting different hospitals, clinics, educational institutions, and public offices. The participants were informed about the purpose of the study and their consent to participate in the study was appropriately taken. They were assured for the confidentiality of the data and were thanked for their participation.

## Analysis

The data gathered were recorded and analyzed in the Statistical Package for Social Sciences. It was cleaned by analyzing missing values, unengaged responses, outliers, linearity, homoscedasticity, multicollinearity, skewness, and kurtosis. Principal component analysis, exploratory factor analysis, and confirmatory factor analysis were conducted to measure the reliability and validity of the EIS. Pearson Correlation Coefficient,  $t$ -test, simple regression, and descriptive statistics were also observed.

## Results

### The Psychometric Properties of Emotional Intelligence Scale (EIS)

The initial item-pool for SIS consisted of 25 items which were constructed by the researchers after reviewing sufficient literature on emotional intelligence and intelligence in general. EIS was initially observed by a panel of 5 expert psychologists who screened it out for appropriate face validity. The panel agreed upon 18 items to be valid for the construct of emotional intelligence. Measuring face validity is regarded as an important initial step in developing a scale.<sup>42</sup> The panel was also asked to rate their levels of agreement against each item for its linguistic clarity and relevance to the construct of sexual intelligence through a 5-point Likert scale, ie, strongly disagree to strongly agree. This procedure is referred to content validity which is also an important technique to make the scale as much valid as possible before the actual data collection.<sup>43</sup> The researchers analyzed the ratings of the panel and found significant positive correlations between the ratings of all the 5 experts, for all the initial 18 items.

To establish the construct validity of EIS, principal component analysis, exploratory factor analysis, and confirmatory factor analysis were conducted in the 3 studies. The exploratory factor analysis (EFA) and the confirmatory factor analysis (CFA) reveals different dimensions available within a scale and determines factorial validity. Principal component analysis was employed for extraction each time. The rotation method was varimax for all the procedures. Sampling adequacy, by using Kaiser-Meyer-Olkin's values<sup>44</sup> was found meritorious in study 1 (Table 1; KMO = 0.858),

**Table 1** Adequacy, Normality, and Description of Data

Scales	N	KMO	BTS/ $\chi^2$	VA	Items	$\alpha$	M	SD	Range		Skewness	Kurtosis
									Potential	Actual		
STUDY 1 (PCA)	500	0.858	914.276*	87.52%								
Emotional Intelligence Scale					12	0.824	54.312	8.369	12–84	33–76	0.035	–0.356
Intrinsic Satisfaction					3	0.890	15.178	3.930	3–21	3–21	–0.524	–0.132
Emotional Expression					3	0.813	11.565	4.206	3–21	3–21	0.093	–0.477
Emotional Regulation					3	0.882	10.929	3.974	3–21	3–21	–0.011	–0.716
Extrinsic Satisfaction	3	0.855	16.640	2.545	3–21	11–21	–0.307	–0.474				
STUDY 2 (EFA)	500	0.919	1208.561*	91.19%								
Emotional Intelligence Scale					12	0.808	55.412	10.007	12–84	29–82	–0.044	–0.451
Intrinsic Satisfaction					3	0.807	15.018	4.149	3–21	3–21	–0.667	–0.306
Emotional Expression					3	0.867	12.376	4.569	3–21	3–21	–0.080	–0.711
Emotional Regulation					3	0.826	11.030	4.307	3–21	3–21	0.048	–0.848
Extrinsic Satisfaction	3	0.803	16.988	2.467	3–21	9–21	–0.412	–0.241				
STUDY 3 (CFA)	894	0.924	2022.658*	90.00%								
Emotional Intelligence Scale					12	0.807	55.097	10.000	12–84	27–84	0.015	–0.446
Intrinsic Satisfaction					3	0.895	14.875	4.137	3–21	3–21	–0.595	–0.440
Emotional Expression					3	0.834	12.264	4.466	3–21	3–21	–0.040	–0.705
Emotional Regulation					3	0.826	10.980	4.306	3–21	3–21	0.023	–0.848
Extrinsic Satisfaction					3	0.862	16.979	2.437	3–21	9–21	–0.404	–0.301
Social Intelligence Scale					8	0.888	38.770	7.294	8–56	14–56	–0.256	–0.165
Emotional Intelligence Measure					33	0.875	125.370	15.711	33–165	66–163	–0.326	0.036
Positive & Negative Affect					20	0.784	56.281	12.246	20–100	20–100	0.145	0.454
Positive Affect	10	0.879	30.213	9.162	10–50	10–50	–0.091	–0.634				
Negative Affect	10	0.886	26.068	10.111	10–50	10–50	0.257	–0.806				

**Abbreviations:** N, number of participants; KMO, Kaiser-Meyer-Olkin Measure of Sample Adequacy; BTS, Bartlett's Test of Sphericity; \* $p = 0.000$ ; VA, Variance Explained;  $\alpha$ , Cronbach's Alpha; M, Mean; SD, Standard Deviation.

and marvelous in study 2 (Table 1; KMO = 0.919) and study 3 (Table 1; KMO = 0.924). Bartlett's test of sphericity<sup>45</sup> was used to analyze the adequacy of correlations between items and was found highly significant in study 1 (Table 1;  $X^2=914.276$ ;  $p=0.000$ ), study 2 (Table 1;  $X^2=1208.561$ ;  $p=0.000$ ), and study 3 (Table 1;  $X^2=2022.658$ ;  $p=0.000$ ). The principal component analysis in study 1 discarded 6 items due to unsatisfactory reliability and validity. The remaining 12 items were tested in the exploratory and confirmatory factor analyses. The factor structure of EIS reported 4 factors in each of the 3 studies (Table 2). These factors were labeled as emotional expression, emotional regulation, intrinsic emotional satisfaction, and extrinsic emotional satisfaction. The communalities for all the items in all the 3 studies ranged between 0.60 and 0.72 (Table 3), thus acceptable as all were above 0.4.<sup>46</sup> All the items of each of the 4 factors in all the 3 studies were significantly and positively correlated with each other (Table 3). The differences between the factor loadings and cross loadings ranged between a minimum difference of 0.445 to a maximum difference of 0.976 (Table 2) reflecting the convergent validity of EIS within its sub-scales.<sup>47</sup> Furthermore, all the factor loadings were above 0.701 and the average of the factor loadings in each of the 4 factors in all the 3 studies was greater than 0.7 (Table 2).

Criterion-related validity is another technique used for validating the scales.<sup>48</sup> This is usually done by measuring the convergent validity of a scale. The convergent validity of EIS was established by correlating emotional intelligence with another scale for emotional intelligence (Emotional Intelligence Measure by Schutte, 1998), social intelligence, and the positive emotional effects. The participants of study 3 responded to EIS along with the other scales used to measure emotional intelligence, social intelligence, and positive and negative emotional effects. The EIS had significant positive correlation with the Schutte Emotional Intelligence Measure (Table 4;  $r=0.459$ ;  $p<0.01$ ). Moreover, the EIS had significant positive correlations with Social Intelligence Scale (Table 4;  $r=0.523$ ;  $p<0.01$ ), and the positive effect sub-scale of the Positive & Negative Affect Schedule (Table 4;  $r=0.406$ ;  $p<0.05$ ). The 4 sub-scales of EIS also had significant positive correlations with Social Intelligence Scale and the positive effect sub-scale of the Positive & Negative Affect Schedule (Table 4). Measuring discriminant validity of a scale is another method to validate the scale.<sup>48</sup> Discriminant validity reveals that the scale is inversely correlated with another construct which is theoretically opposite to the understudied construct. The participants of study 3 responded to the EIS along with the Positive & Negative Affect Schedule (PNAS). The EIS had significant inverse correlation with the negative effect sub-scale of PNAS (Table 4;  $r=-0.332$ ;  $p<0.01$ ). The 4 sub-scales of EIS also had significant inverse correlations with the negative effect sub-scale of PNAS (Table 4).

The reliability of a scale refers to the consistency in the results by repeating it again and again (Rothman et al, 2008). The mean scores of emotional intelligence and its sub-factors retrieved from the 3 consecutive studies are constant with each other (Table 1). Internal consistency or homogeneity is an important factor in the reliability of a scale.<sup>49</sup> Cronbach alpha is the most used measure for internal consistency reliability.<sup>50</sup> The Cronbach's alpha reliability for EIS was good in study 1 (Table 1;  $\alpha=0.824$ ), study 2 (Table 1;  $\alpha=0.808$ ), and study 3 (Table 1;  $\alpha=0.807$ ). The alpha for its sub-scales in all the studies ranged between 0.803 and 0.895 (Table 1). Item-total and item-scale correlations are also important in measuring the reliability of a scale.<sup>51</sup> The item-total and item-scale correlations were highly significant for all the items of EIS, in all the 3 studies (Table 3).

## Additional Findings

The studies revealed a significantly higher level of emotional intelligence in men as compared to women (Table 5;  $M = 57.52$  vs  $53.56$ ;  $p=0.000$ ; Cohen's  $d=0.404$ ). Men also had significantly higher levels on 3 out of 4 sub-scales of emotional intelligence, ie, satisfaction (Table 5;  $M = 15.56$  vs  $14.44$ ;  $p=0.000$ ; Cohen's  $d=0.273$ ), expressions (Table 5;  $M = 12.11$  vs  $10.26$ ;  $p=0.000$ ; Cohen's  $d=0.440$ ), and regulation (Table 5;  $M = 12.92$  vs  $11.84$ ;  $p=0.000$ ; Cohen's  $d=0.242$ ). Men and women did not project significant differences on the interaction, ie, the sub-scale of emotional intelligence. Men also projected significantly higher scores on social intelligence (Table 5;  $M = 40.38$  vs  $37.75$ ;  $p=0.000$ ; Cohen's  $d=0.367$ ) and the positive effects sub-scale of PNAS (Table 5;  $M = 31.82$  vs  $29.19$ ;  $p=0.000$ ; Cohen's  $d=0.290$ ). Women projected significantly higher scores on the negative effects sub-scale of PNAS (Table 5;  $M = 26.62$  vs  $25.18$ ;  $p=0.039$ ; Cohen's  $d=0.142$ ).

Age had significantly positive correlations with emotional intelligence (Table 4;  $r=0.078$ ;  $p<0.05$ ), emotional regulation (Table 4;  $r=0.100$ ;  $p<0.01$ ), and positive emotional effects (Table 4;  $r=0.153$ ;  $p<0.01$ ). Age had a significantly inverse correlation with negative emotional effects (Table 4;  $r=-0.114$ ;  $p<0.01$ ). Education had

**Table 2** Factor Structure of Emotional Intelligence Scale

Item No.	Item	Study 1 (PCA)				Study 2 (EFA)				Study 3 (CFA)			
		IS	EE	ER	ES	IS	EE	ER	ES	IS	EE	ER	ES
1	I am happy with my life.	<b>0.771</b>	-0.001	0.072	0.004	<b>0.730</b>	0.143	0.159	-0.023	<b>0.753</b>	0.095	0.138	-0.004
2	I am usually relaxed.	<b>0.793</b>	0.054	0.228	-0.071	<b>0.815</b>	0.166	0.187	0.023	<b>0.785</b>	0.163	0.266	-0.019
3	I can sleep well.	<b>0.770</b>	0.144	0.127	-0.029	<b>0.718</b>	0.017	0.128	-0.014	<b>0.701</b>	0.018	0.135	0.007
4	I consider myself fully capable of expressing my emotions anywhere and anytime.	0.229	<b>0.801</b>	0.008	0.031	0.270	<b>0.783</b>	0.065	0.059	0.265	<b>0.782</b>	0.068	0.053
5	I always want to express my emotions freely.	-0.140	<b>0.760</b>	-0.004	-0.133	-0.019	<b>0.759</b>	-0.051	-0.005	0.040	<b>0.727</b>	-0.093	-0.027
6	I can express my emotions in words.	0.127	<b>0.759</b>	0.057	0.170	0.105	<b>0.741</b>	0.119	0.073	-0.004	<b>0.725</b>	0.237	0.104
7	I can control my mood the way I wish.	0.130	0.112	<b>0.761</b>	0.097	0.162	0.076	<b>0.767</b>	0.196	0.223	0.108	<b>0.757</b>	0.136
8	I can control my anger easily.	0.027	0.000	<b>0.764</b>	0.028	0.057	-0.021	<b>0.834</b>	0.066	0.055	-0.014	<b>0.801</b>	0.073
9	I never get sad because of others.	0.303	-0.046	<b>0.791</b>	-0.069	0.253	0.071	<b>0.761</b>	-0.088	0.218	0.067	<b>0.788</b>	-0.086
10	I can understand the feelings of others the way they feel.	-0.094	0.062	0.143	<b>0.789</b>	-0.049	-0.011	0.139	<b>0.800</b>	-0.016	-0.018	0.113	<b>0.831</b>
11	I can understand the emotions of others around me.	-0.105	-0.080	0.022	<b>0.800</b>	-0.148	0.014	0.094	<b>0.828</b>	-0.107	0.023	0.069	<b>0.836</b>
12	People interact with me comfortably.	0.303	0.163	-0.226	<b>0.748</b>	0.342	0.181	-0.133	<b>0.793</b>	0.338	0.225	-0.171	<b>0.789</b>

**Notes:** Extraction Method: Principal Component Analysis; Rotation Method: Oblimin with Kaiser Normalization; Factor structure is Bold.

**Abbreviations:** IS, Intrinsic Satisfaction; EE, Emotional Expression; ER, Emotional Regulation; ES, Extrinsic Satisfaction.

**Table 3** Communalities, Item-Total and Item-Scale Correlations for Emotional Intelligence Scale

Item	Study 1 (PCA)						Study 2 (EFA)						Study 3 (CFA)					
	Ext.	EIS	IS	EE	ER	ES	Ext.	EIS	IS	EE	ER	ES	Ext.	EIS	IS	EE	ER	ES
1	0.600	0.451**	0.738**				0.679	0.563**	0.765**				0.695	0.546**	0.758**			
2	0.689	0.555**	0.808**				0.727	0.652**	0.853**				0.714	0.662**	0.840**			
3	0.687	0.522**	0.771**				0.632	0.513**	0.769**				0.609	0.514**	0.771**			
4	0.696	0.560**		0.837**			0.694	0.624**		0.828**			0.688	0.615**		0.819**		
5	0.614	0.294**		0.773**			0.679	0.410**		0.744**			0.640	0.401**		0.731**		
6	0.683	0.508**		0.700**			0.680	0.533**		0.753**			0.693	0.526**		0.730**		
7	0.618	0.398**			0.774**		0.659	0.586**			0.797**		0.652	0.623**			0.809**	
8	0.685	0.446**			0.728**		0.704	0.488**			0.805**		0.651	0.492**			0.782**	
9	0.647	0.456**			0.696**		0.692	0.464**			0.659**		0.605	0.467**			0.674**	
10	0.655	0.273**				0.741**	0.663	0.287**				0.783**	0.704	0.285**				0.783**
11	0.657	0.128*				0.666**	0.717	0.228**				0.773**	0.715	0.228**				0.753**
12	0.670	0.346**				0.609**	0.619	0.393**				0.695**	0.634	0.355**				0.667**

**Notes:** \*\*Correlation is significant at the 0.01 level (2-tailed); \*Correlation is significant at the 0.05 level (2-tailed).

**Abbreviations:** Ext., Extraction; EIS, Item-total correlation with Emotional Intelligence Scale; IS, Item-scale correlation with Intrinsic Satisfaction; EE, Item-scale correlation with Emotional Expression; ER, Item-scale correlation with Emotional Regulation; ES, Item-scale correlation with Extrinsic Satisfaction.

**Table 4** The Understudied Correlations

	Intrinsic Satisfaction	Emotional Expressions	Emotional Regulation	Extrinsic Satisfaction	Emotional Intelligence Measure	Social Intelligence Scale	Positive Affect	Negative Affect	Age	Education
Emotional Intelligence Scale	0.726**	0.675**	0.699**	0.401**	0.459**	0.523**	0.406**	-0.332**	0.078*	0.097**
Intrinsic Satisfaction		0.277**	0.392**	0.080*	0.261**	0.358**	0.351**	-0.406**	0.064	0.102**
Emotional Expression			0.172**	0.163**	0.278**	0.251**	0.233**	-0.070*	0.035	0.043
Emotional Regulation				0.119**	0.288**	0.417**	0.285**	-0.286**	0.100**	0.072*
Extrinsic Satisfaction					0.420**	0.340**	0.139**	-0.039	-0.028	0.018
Emotional Intelligence Measure						0.530**	0.292**	-0.269**	0.048	0.047
Social Intelligence Scale							0.321**	-0.285**	-0.018	0.074*
Positive Affect								-0.195**	0.153**	0.074*
Negative Affect									-0.114**	-0.033
Age										0.380**

Notes: \*\*Correlation is significant at the 0.01 level (2-tailed); \*Correlation is significant at the 0.05 level (2-tailed).



**Table 5** Gender-Based Differences (N = 894)

Variables	Men (n=346)		Women (n=548)		t (892)	p	Cohen's d
	M	SD	M	SD			
Emotional Intelligence	57.526	10.112	53.564	9.627	5.878	0.000	0.404
Intrinsic Satisfaction	15.561	4.103	14.442	4.104	3.972	0.000	0.273
Emotional Expression	12.922	4.479	11.849	4.412	3.522	0.000	0.242
Emotional Regulation	12.116	4.197	10.263	4.222	6.406	0.000	0.440
Extrinsic Satisfaction	16.928	2.626	17.011	2.311	0.497	0.619	–
Social Intelligence	40.384	7.365	37.750	7.068	5.340	0.000	0.367
Positive Affect	31.827	9.067	29.193	9.084	4.225	0.000	0.290
Negative Affect	25.188	10.463	26.624	9.852	2.072	0.039	0.142

significantly positive correlations with emotional intelligence (Table 4;  $r=0.097$ ;  $p<0.05$ ), emotional satisfaction (Table 4;  $r=0.102$ ;  $p<0.01$ ), emotional regulation (Table 4;  $r=0.072$ ;  $p<0.05$ ), social intelligence (Table 4;  $r=0.074$ ;  $p<0.05$ ), and positive emotional effects (Table 4;  $r=0.074$ ;  $p<0.01$ ). Emotional intelligence had significantly positive correlations with social intelligence (Table 4;  $r=0.523$ ;  $p<0.01$ ), and positive emotional effects (Table 4;  $r=0.406$ ;  $p<0.01$ ). Emotional intelligence had significantly inverse correlation with negative emotional effects (Table 4;  $r=-0.332$ ;  $p<0.01$ ).

## Discussion

Studying intelligence and its sub-types has been an interesting area for researchers. The construct of emotional intelligence has been a significant area of debate since 1990. Several theorists have come up with valuable ideas in this regard. However, the definitions and structure of emotional intelligence have not been agreed upon. After reviewing the significant earlier models of emotional intelligence, eg, the ability-based model,<sup>21</sup> the competent model,<sup>19</sup> and the mixed model,<sup>52–54</sup> the current study was aimed at simplifying the construct of emotional intelligence and presenting a brief scale to measure it. The current study developed and validated a new scale in this regard which was labelled as “Emotional Intelligence Scale (EIS)”. EIS comprises 12 items in English and has 4 sub-scales namely emotional expression, emotional regulation, intrinsic emotional satisfaction, and extrinsic emotional satisfaction. The reliability and validity of EIS was evaluated through a series of 3 consecutive studies by involving 1894 participants and by applying principal component analysis, exploratory factor analysis, confirmatory factor analysis, convergent validity, and discriminant validity. Emotional intelligence was defined as an “ability to express and regulate emotions for intrinsic and extrinsic emotional satisfaction”. This definition covers the four important sub-factors of emotional intelligence (emotional expression, emotional regulation, intrinsic emotional satisfaction, and extrinsic emotional satisfaction) that have also been previously regarded as significant contributors to emotional intelligence. The combination of these factors intends to unite the earlier models of emotional intelligence under a shared platform. Items 1 to 3 of the EIS are related to intrinsic emotional satisfaction. Items 10 to 12 of the EIS are related to the extrinsic emotional satisfaction. Several earlier researchers have considered intrinsic emotional satisfaction as an important component for emotional intelligence and the ultimate goal of emotions.<sup>35,55</sup> Likewise, the role of emotions has also been highly established in social adaptation.<sup>56,57</sup> Several earlier researchers have correlated higher emotional intelligence with better social interactions.<sup>58–60</sup> Managing the emotions of others, apart from managing one’s own emotions, has also been considered important for emotional intelligence.<sup>34</sup> Emotional aspects play a vital role in social interactions.<sup>58</sup> Social inhibition, on the other hand, comprises difficulty in talking to others, fear of being negatively evaluated, and social withdrawal.<sup>61</sup> It stops a person to function appropriately in social settings<sup>62</sup> and generates several emotional problems.<sup>63</sup> The intrinsic and extrinsic emotional satisfaction, therefore, are the ultimate objective of emotional intelligence which are achieved through the process of emotional expression and emotional regulation. Items 4 to 6 of the EIS are related to emotional expression. Expressions are regarded mandatory for emotions<sup>64</sup> and have established cathartic effects.<sup>65–68</sup> Emotional suppression, on the other hand, reduces emotional experience.<sup>58</sup> It has been regarded harmful for mental health<sup>69</sup> and relational strengths.<sup>70</sup> Items 7 to 9 of the EIS are related to emotional regulation. Emotional regulation is how a person can effectively manage his/her emotions.<sup>71</sup> It is based on awareness, goals, and strategies.<sup>72</sup> This can be

conscious or unconscious.<sup>73</sup> Several earlier researchers have considered emotional regulation as an important component for emotional intelligence.<sup>74,75</sup> Identifying, perceiving, and understanding emotions have been regarded an essential part of emotional intelligence.<sup>34</sup> The four factors (emotional expression, emotional regulation, intrinsic emotional satisfaction, and extrinsic emotional satisfaction) that comprised EIS, therefore, are all theoretically associated with the construct of emotional intelligence. The same theoretical association has been statistically verified by the current study. In consistent to the earlier studies,<sup>76</sup> the current study also found significantly positive correlation between emotional and social intelligence. The additional findings of the current study reveal a significantly higher level of emotional intelligence in men as compared to women. The earlier studies reveal mixed results in this regard. These mixed results have been attributed to the variety of diversified scales used to assess emotional intelligence.<sup>77</sup> Some studies report women having higher emotional intelligence.<sup>78–83</sup> The emotionality of women can also be related to their moral values which are higher than men.<sup>84</sup> Studies also reveal no significant differences in emotional intelligence based on gender.<sup>29,78,85–89</sup> Plenty of other studies, on the other hand, have reported men to be better when it comes to emotional regulation, managing impulses, and coping with stress.<sup>81,90–97</sup> The current study also revealed significantly positive correlations of emotional intelligence with age and education which were in align with the earlier literature.<sup>98–100</sup>

## Conclusion

The objective of the current study was to develop and validate a brief scale to measure emotional intelligence in a simplified way. The study reviewed the earlier models of emotional intelligence and summarized emotional intelligence as an “ability to express and regulate emotions for intrinsic and extrinsic emotional satisfaction”. Emotional Intelligence Scale (EIS), comprising 12 items in English, was developed and validated. The scale was based on the four core factors of emotional intelligence which were retrieved and summarized from the earlier literature. These factors included emotional expression, emotional regulation, intrinsic emotional satisfaction, and extrinsic emotional satisfaction. The newly developed scale was regarded to be the shortest ever scale to measure emotional intelligence in a theoretically and statistically validated way.

## Implications

The current research would be highly beneficial for future researchers as it has compiled and summarized the earlier theories on emotional intelligence. The newly developed and validated scale on emotional intelligence is far brief and comprehensive as compared to the earlier scales of similar nature. This will save time and energies of future researchers and their respondents. Future researchers are encouraged to translate this scale in their local languages to facilitate a broader community of researchers.

## Disclosure

The authors report no conflicts of interest in this work.

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