# Academic Achievement in Engineering: Does Emotional Intelligence Matter?

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## ABSTRACT

The study aims to explore different factors of emotional intelligence and investigate the relationship between factors of emotional intelligence and variables like gender, schooling and age. The relationship between different factors of emotional intelligence and academic performance of engineering students is also examined. Students (N=177) attending an engineering institution filled the questionnaire. The instrument used for data collection is considered to be reliable as Cronbach's alpha for the instrument is 0.752. The data is analyzed using various statistical tools like Factor analysis, Montecarlo parallel analysis, t-test, Mean, Standard deviation, ANOVA and Regression analysis. Based on factor analysis 32 components are categorized into five factors-Emotional Management, Awareness, Negative outlook, Non-verbal messages and Positive outlook. The findings revealed that gender of the college students makes significant influence on emotional management and non-verbal messages whereas background of the college students makes significant influence only on non-verbal messages but does not influence other factors. Whereas schooling of the college students does not significantly influence any of the factors of emotional intelligence. Academic performance of engineering students is found to be independent of factors of emotional intelligence.

## Introduction

Academic development is the primary goal of colleges and universities and overall personality development of the students is the secondary goal. College education may demonstrate to be career limiting if healthy emotional development is not perceived to play an important and necessary role of the total college experience. In order to achieve the educational objectives of the 21st century, it is necessary to develop healthy, responsible, and productive students, teachers, faculty, staff, and administrators in all academic disciplines. Emotional knowledge, skills, and competencies are essential to the student development. Improving emotional intelligence is a key factor in physical and mental health, academic achievement, personal satisfaction, and career excellence. Emotional competencies are learned capabilities that must be worked on and developed to achieve outstanding performance (Goleman, 1998).

## Conceptual Framework

### Emotional Intelligence:

According to Goleman (1998, p.375), emotional intelligence is "the capacity for recognizing our

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own feelings and those of others, for motivating ourselves and for managing emotions well in ourselves and in our relationships".

Reuven Bar-On (1997) used Gardner's work to define EQ (Emotional Quotient) within the context of personality theory. He described EQ as "an array of personal, emotional, and social abilities and skills that influence one's ability to succeed in coping with environmental demands and pressures"

## Literature Framework

Various research studies were conducted on factors of emotional intelligence and relationship between emotional intelligence and academic achievement. The findings of the studies are reviewed to have a backdrop for the present study.

Goleman (2001), the main contributor to emotional intelligence, put forward a theory of EQ that is performance based and he related EQ to 20 competencies in four clusters of general abilities. The four clusters comprise Self-Awareness, Social Awareness, Self-Management, and Relationship Management. Whereas Bar-On's model considered five domains: Intrapersonal Skills, Interpersonal Skills, Adaptability, Stress Management, and General Mood.

Çetinkaya and Alparslan (2011) explored the relationship between sub-dimensions of emotional intelligence of Applied Technology and Management College students and sub-dimensions of communication skills and found a positive, significant but weak relationship. Grehan, *et al*., (2011) investigated the relationship between individual characteristics and emotional intelligence of postgraduate students in the classroom and in the field. They regarded the grade average of students and assessment of apprenticeship performance as indicators of achievement. It was found that there is a significant relationship between emotional intelligence, grade average and apprenticeship achievements. Kalhotra (2012) based on his study observed that there is positive correlation between emotional intelligence and academic achievement of school children. Parker**,** *et al***.,** (2004) found that academic success was strongly associated with several dimensions of emotional intelligence. Erdoðdu and Edge (2005) based on their study conducted on students of Faculty Science, Engineering Faculty, College of Physical Education, Faculty of Law, Faculty of Letters, Faculty of Fine Arts and Heath Science, concluded that there are relations between academic achievements and especially understanding own emotions and Emotion Management subscales of Emotional Intelligence scale.

Landau and Meirovich (2011) conducted a study in order to determine the role of participatory classroom environment over emotional intelligence of business management postgraduate students and whether there is relationship between emotional intelligence and academic achievements or not. The findings revealed that the opportunity of participating has a positive relationship with emotional intelligence for male students whereas it is not related with emotional intelligence of female students. In addition to this, irrespective of student's sex, it is observed that a supportive environment has positive relationship with emotional intelligence. Further the study did not reveal relationship between the emotional intelligence and grade averages of the students.

Tariq, Majoka and Hussain (2011) conducted an empirical study on the emotional intelligence of university students in order to explain self-

perception status of students in terms of different factors of emotional intelligence, comparing female and male students and establishing a relationship between the academic achievements and perceived emotional intelligence. The results concluded that university students are highly aware of self-reports. Although there is a great difference between perceptions of female and male students, male students believe that they are more superior in factors of emotional intelligence, compared to the female students. Furthermore, the study did not reveal a relationship between students' emotional intelligence and academic achievements.

The study of O'Connor Jr. and Little (2003) investigated the relationship between emotional intelligence and academic achievements of university students by using an emotional intelligence scale based on both self-report and skill. The study revealed that irrespective of the scale used for measuring the type of emotional intelligence, emotional intelligence is not a powerful indicator of academic achievement. The Emotional Intelligence Inventory was administered to 138 college students. The results revealed that women scored higher than their male counterparts. However, regarding grade point, there was no significant effect (Sutarso, 1996).

Wong et al., (2005) explored that, age is positively correlated with emotional intelligence across different job situations. VanRooy, et al., (2005) conducted a study in which a common measure of emotional intelligence was administered to 275 participants in order to determine how different age groups score on a test of EI. Based on the findings of the study it was observed that emotional intelligence scores tended to rise with age. Contrary to these findings, Jacques (2009) based on a study conducted among a sample of 221 college students found that age did not predict emotional intelligence.

The review of literature revealed that some studies reported that there is significant relationship between emotional intelligence and academic performance of the students while some studies revealed contradictory results. Similarly some authors claim that age and gender influence emotional intelligence but certain authors claim differently. Against this backdrop it is felt that research in this area can help in substantiating the results of the previous studies or prove otherwise.

## Objectives of the Study

1. To explore different factors of emotional intelligence.
2. To determine if there is significant difference in factors of emotional intelligence of engineering students based on gender, schooling, and background.
3. To study the relationship between factors of emotional intelligence of students and age.
4. To determine the relationship between different factors of emotional intelligence and academic performance.

**5. Hypotheses**

1.1 Gender of the college students does not make significant influence on the factors of emotional intelligence.

1.2 Background of the college students does not make significant influence on the factors of emotional intelligence.

1.3 Schooling of the college students does not make significant influence on the factors of emotional intelligence.

2. There is no relationship between emotional intelligence of students and their age.

3. There is no significant relationship between factors of emotional intelligence and academic achievement among engineering students

## Methodology

Survey method was used and the study is conducted in an engineering institution. The population for the study comprises 1500 B. Tech students. The simple random sample technique was adopted for this sampling study and the sample size is 177. Primary data is collected with the help of a questionnaire. The questionnaire consists of two sections. The first section deals with demographic details of the students and the second section deals with emotional intelligence items. The Emotional intelligence scale developed and standardized by Schutte et al., (1998) was used in this study. It is based on a five point scale that includes Strongly Agree (SA), Agree (A), Neutral (N), Disagree (DA), and Strongly Disagree (SD). The respondents have to express his/her emotional intelligence on the five point scale. The scale comprises 33 items of which 31 are positive and 2 are negative statements. Cronbach alpha coefficient was used to determine the internal consistency, homogeneity and unidimensionality of the measuring instrument (Clark & Watson, 1995). Coefficient alpha contains important information regarding the proportion of variance of the items of a scale in terms of the total variance explained by the particular scale. Cronbach's alpha for the instrument is 0.752 which ensures the reliability of the instrument. Students' academic performance is taken from academic records. The collected data is analyzed using Factor analysis, Montecarlo parallel analysis, Mean, Standard deviation, t-test, ANOVA and Regression analysis.

**Table 1 : Demographic Details of the Students**

| S. No. | Variable | Sub-category | Sample size | Per cent |
|---|---|---|---|---|
| 1 | Gender | Male<br>Female | 115<br>62 | 65.0<br>35.0 |
| 2 | Age | 18 years<br>19 years<br>20 years<br>21 years<br>22 years<br>23 years | 20<br>51<br>67<br>32<br>6<br>1 | 11.3<br>28.8<br>37.9<br>18.1<br>8.4<br>6.0 |
| 3 | Type of schooling | Private<br>Government | 142<br>35 | 80.2<br>19.8 |
| 4 | Background | Rural<br>Urban | 95<br>82 | 53.7<br>46.3 |
| | Total | | 177 | 100 |

## Analysis

The sampling adequacy of the data is evaluated on the basis of the results of Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy and Bartlett's test of Sphericity (homogeneity of variance). The KMO measure of sampling adequacy is .658, reflecting that the present data are suitable for Factor Analysis. Similarly, Bartlett's test sphericity is significant ($p<0.001$), indicating that significant correlation exists between the variables to proceed with the analysis. The Bartlett's test statistic is approximately distributed and it may be accepted when it is significant at $p<0.05$ (Table2).

**Table 2 : KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.658 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1124.542 |
| | D.f. | 528 |
| | Significance | 0.000 |

A simple factor analysis was done and 12 factors are extracted (with eigen values higher than 1) explaining 61.441% of the variance.

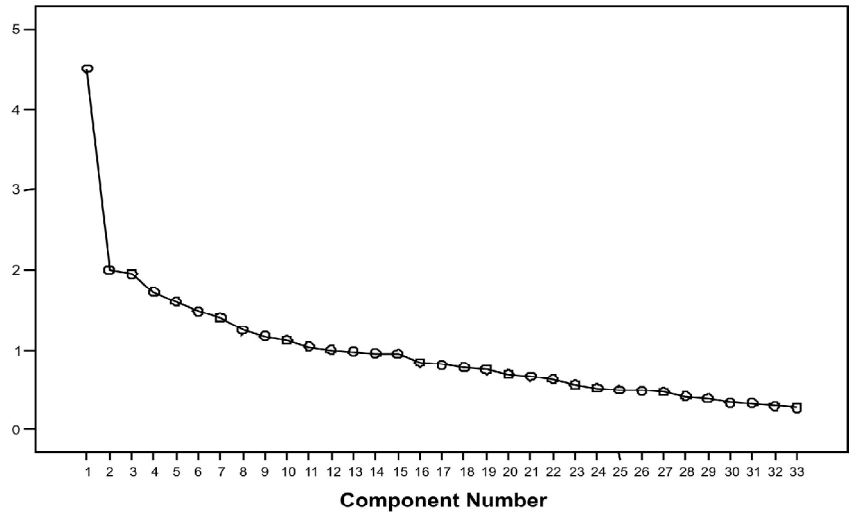
**Table 3 : Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.510 | 13.668 | 13.668 | 4.510 | 13.668 | 13.668 |
| 2 | 2.002 | 6.065 | 19.733 | 2.002 | 6.065 | 19.733 |
| 3 | 1.953 | 5.917 | 25.651 | 1.953 | 5.917 | 25.651 |
| 4 | 1.728 | 5.236 | 30.886 | 1.728 | 5.236 | 30.886 |
| 5 | 1.601 | 4.852 | 35.738 | 1.601 | 4.852 | 35.738 |
| 6 | 1.481 | 4.487 | 40.225 | 1.481 | 4.487 | 40.225 |
| 7 | 1.404 | 4.254 | 44.479 | 1.404 | 4.254 | 44.479 |
| 8 | 1.248 | 3.783 | 48.262 | 1.248 | 3.783 | 48.262 |
| 9 | 1.174 | 3.556 | 51.818 | 1.174 | 3.556 | 51.818 |
| 10 | 1.126 | 3.411 | 55.229 | 1.126 | 3.411 | 55.229 |
| 11 | 1.047 | 3.172 | 58.402 | 1.047 | 3.172 | 58.402 |
| 12 | 1.003 | 3.039 | 61.441 | 1.003 | 3.039 | 61.441 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 13 | 0.980 | 2.970 | 64.411 | | | |
| 14 | 0.959 | 2.906 | 67.317 | | | |
| 15 | 0.952 | 2.884 | 70.200 | | | |
| 16 | 0.842 | 2.551 | 72.751 | | | |
| 17 | 0.815 | 2.468 | 75.220 | | | |
| 18 | 0.784 | 2.376 | 77.596 | | | |
| 19 | 0.755 | 2.288 | 79.883 | | | |
| 20 | 0.694 | 2.102 | 81.985 | | | |
| 21 | 0.672 | 2.035 | 84.020 | | | |
| 22 | 0.636 | 1.928 | 85.948 | | | |
| 23 | 0.569 | 1.723 | 87.671 | | | |
| 24 | 0.523 | 1.585 | 89.256 | | | |
| 25 | 0.503 | 1.526 | 90.782 | | | |
| 26 | 0.492 | 1.491 | 92.273 | | | |
| 27 | 0.479 | 1.453 | 93.726 | | | |
| 28 | 0.420 | 1.272 | 94.998 | | | |
| 29 | 0.395 | 1.196 | 96.194 | | | |
| 30 | 0.344 | 1.041 | 97.235 | | | |
| 31 | 0.335 | 1.015 | 98.250 | | | |
| 32 | 0.297 | 0.900 | 99.150 | | | |
| 33 | 0.281 | 0.850 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

**Figure 1 : Scree Plot**



Scree plot involves plotting each of the Eigen values of the factor and inspecting the plot to find a pint at which the shape of the curve changes direction and become horizontal. Figure 1 shows a sharp break in sizes of eigenvalues which results in a change in the slope of the plot from steep to shallow. The scree plot shows the main point of inflexion after one component and another point of inflexion after six factors.

Based on Eigen values twelve factors are considered but the scree plot shows the point of inflexion after one and six factors. As there is difference in the results Monte Carlo Simulation Parallel analysis is used.

Number of variables : 33 Number of subjects: 177

Number of replications : 100

It is observed from Table 4 (Appendix) that the results of Monte Carlo Simulation parallel analysis, a comparison of eigen values reveals that only for six factors, calculated eigen values of the components are greater than random eigen values generated with the help of parallel analysis. Hence it is preferable to take six factors. The factor analysis is run with six factors and the results are presented in Table 5 (Appendix).

Only those factors whose loadings are greater than .30 are used for interpretation purpose.

For fourth factor as there is only one component, it is not considered.

Table 7 (Appendix) unfolds factor segmentation. Based on components matrix, the newly constructed factors have been renamed as

a. Emotional Management (17 items)
b. Awareness (5 items)
c. Negative outlook (3 items)
d. Non verbal messages (4 items)
e. Positive outlook (3 items)

Table 7 shows that 32 components are assigned to five factors. One factor is dropped as there is only one component assigned to the factor.

## Results & Discussion

**Hypothesis 1.1**: Gender of the college students does not make significant influence on the factors of emotional intelligence.

‘t’ test is used in order to test the hypothesis.

**Table 8 : Relationship between Gender and Factors of Emotional Intelligence**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
|---|---|---|---|---|---|---|
| | | **F** | **Sig** | **t** | **D.f.** | **Sig (2 tailed)** |
| Emotional Management | Equal variances assumed<br>Equal variances not assumed | 0.065 | 0.799 | -1.946<br>-1.940 | 175<br>123.866 | 0.053<br>0.055 |
| Awareness | Equal variances assumed<br>Equal variances not assumed | 0.0869 | 0.353 | 0.214<br>0.286 | 175<br>126.242 | 0.831<br>0.755 |
| Negative outlook | Equal variances assumed<br>Equal variances not assumed | 0.034 | 0.853 | 1.852<br>1.818 | 175<br>118.586 | 0.066<br>0.072 |
| Non-verbal messages | Equal variances assumed<br>Equal variances not assumed | 1.129 | 0.289 | -2.276<br>-2.203 | 175<br>114.019 | 0.024<br>0.030 |
| Positive outlook | Equal variances assumed<br>Equal variances not assumed | 2.147 | 0.145 | 0.364<br>0.385 | 175<br>146.058 | 0.716<br>0.701 |

If the p value is less than or equal to á level, then the bottom row of the output (the row labeled "Equal variances not assumed") is used. If the p value is greater than á level, then the top row of the output (the row labeled "Equal variances assumed") is used. It is observed from table 8 that, p value is larger than á (.05), so it will be assumed that the variances are equal and the top row of the output is used. The decision rule is given by: If p d" á, $H_0$ is rejected. For emotional management and non-verbal messages, p d" á hence null hypothesis is rejected. Hence it can be inferred that Gender of the college students makes significant influence on emotional management and non-verbal messages. t test revealed a statistically reliable difference between the mean score of these two factors of emotional intelligence of male and female students.

**Hypothesis 1.2**: Background of the college students does not make significant influence on the factors of emotional intelligence.

't' test is used in order to test the hypothesis.

**Table 9 : Relationship between Background of the Students and Factors of Emotional Intelligence**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
|---|---|---|---|---|---|---|
| | | **F** | **Sig** | **t** | **D.f.** | **Sig (2 tailed)** |
| Emotional Management | Equal variances assumed<br>Equal variances not assumed | 0.500 | 0.824 | 0.384<br>0.381 | 175<br>166.596 | 0.702<br>0.703 |
| Awareness | Equal variances assumed<br>Equal variances not assumed | 0.914 | 0.340 | 1.138<br>1.220 | 175<br>101.553 | 0.256<br>0.225 |
| Negative outlook | Equal variances assumed<br>Equal variances not assumed | 0.143 | 0.706 | -0.447<br>-0.445 | 175<br>167.986 | 0.655<br>0.657 |
| Non-verbal messages | Equal variances assumed<br>Equal variances not assumed | 0.005 | 0.946 | -2.204<br>-2.209 | 175<br>172.669 | 0.029<br>0.028 |
| Positive outlook | Equal variances assumed<br>Equal variances not assumed | 2.319 | 0.130 | 0.766<br>0.760 | 175<br>164.751 | 0.445<br>0.448 |

An independent sampling t-test was made in order to understand whether or not factors of emotional intelligence are background related. Only for non-verbal messages, p d" á hence null hypothesis is rejected. Hence it can be inferred that background of the college students makes significant influence on non-verbal messages but does not make significant influence on other factors.

**Hypothesis 1.3**: Schooling of the college students does not make significant influence on the factors of emotional intelligence.

't' test is used in order to test the hypothesis.

**Table 9 :**
**Relationship between Schooling of the Students and Factors of Emotional Intelligence**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
|---|---|---|---|---|---|---|
| | | **F** | **Sig** | **t** | **D.f.** | **Sig (2 tailed)** |
| Emotional Management | Equal variances assumed<br>Equal variances not assumed | 1.197 | 0.275 | -.1.335<br>-1.442 | 175<br>57.672 | 0.184<br>0.155 |
| Awareness | Equal variances assumed<br>Equal variances not assumed | 0.362 | 0.548 | 0.448<br>0.852 | 175<br>168.536 | 0.655<br>0.395 |
| Negative outlook | Equal variances assumed<br>Equal variances not assumed | 0.409 | 0.523 | -1.143<br>-1.164 | 175<br>53.230 | 0.255<br>0.250 |
| Non-verbal messages | Equal variances assumed<br>Equal variances not assumed | 0.773 | 0.380 | -0.214<br>-0.224 | 175<br>55.228 | 0.831<br>0.823 |
| Positive outlook | Equal variances assumed<br>Equal variances not assumed | 0.001 | 0.972 | 0.883<br>0.899 | 175<br>53.247 | 0.379<br>0.373 |

For all the factors of emotional intelligence p > á hence failed to reject null hypothesis. Hence it can be inferred that schooling of the college students does not make significant influence on the factors of emotional intelligence.

**Hypothesis 2**: Age of the college students does not make significant influence on the factors of emotional intelligence.

'ANOVA' is used in order to test the hypothesis.

**Table 10 :**
**Relationship between Factors of emotional intelligence and age**

| | | Sum of Squares | D.f. | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Emotional Management | Between Groups<br>Within Groups<br>Total | 1.185<br>27.100<br>28.285 | 5<br>171<br>176 | 0.237<br>0.158 | 1.495 | 0.194 |
| Awareness | Between Groups<br>Within Groups<br>Total | 640.694<br>34.776<br>675.470 | 5<br>171<br>176 | 128.139<br>0.203 | 630.076 | 0.000 |
| Negative outlook | Between Groups<br>Within Groups<br>Total | 2.095<br>59.492<br>61.587 | 5<br>171<br>176 | 0.419<br>0.348 | 1.205 | 0.309 |
| Non-verbal messages | Between Groups<br>Within Groups<br>Total | 3.190<br>64.130<br>67.320 | 5<br>171<br>176 | 0.638<br>0.375 | 1.701 | 0.137 |
| Positive outlook | Between Groups<br>Within Groups<br>Total | 2.265<br>44.706<br>46.972 | 5<br>171<br>176 | 0.453<br>0.261 | 1.733 | 0.130 |

The ANOVA analysis conducted revealed that there is statistically significant difference in awareness factor according to their age.

**Table 11 : Mean and Standard Deviation of Emotional Intelligence Factors**

| Factors | Mean | Std.Deviation |
|---|---|---|
| Emotional management | 3.8712 | 0.40258 |
| Awareness | 4.1565 | 1.97024 |
| Negative outlook | 3.1143 | 0.58473 |
| Non-verbal messages | 3.7638 | 0.61906 |
| Positive outlook | 3.9581 | 0.51741 |

Table 11 reveals that awareness factor has high mean score followed by positive outlook whereas negative outlook has the lowest mean score.

**Hypothesis 3:** There is no significant relationship between factors of emotional intelligence and academic achievement among engineering students.

The hypothesis is tested using Regression analysis

**Table 12 : ANOVA**

| Model | Sum of Squares | Degrees of Freedom | Mean Square | F | Significance |
|---|---|---|---|---|---|
| Regression | 249.048 | 5 | 49.188 | 0.915 | 0. 473 |
| Residual | 9199.237 | 169 | 54.433 | | |
| Total | 9448.325 | 174 | | | |

Predictors: (Constant), Positive outlook, Awareness, Nonverbal messages, Negative outlook, Emotional Management

**Dependent variable: Academic performance**

**Table 13 : Regression Coefficients**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig |
|---|---|---|---|---|---|
| | B | Std.Error | Beta | | |
| (Constant) | 59.747 | 6.892 | - | 8.669 | 0.000 |
| Emotional management | 1.128 | 1.560 | 0.062 | 0.723 | 0.471 |
| Awareness | -0.184 | 0.292 | -0.049 | -0.631 | 0.529 |
| Negative outlook | 1.689 | 0.988 | 0.134 | 1.709 | 0.089 |
| Nonverbal messages | 0.662 | 0.950 | 0.056 | 0.697 | 0.487 |
| Positive outlook | -0.141 | 1.199 | -0.010 | -0.117 | 0.907 |

**Dependent variable: Academic Performance**

Table 11 and 12 clearly show that academic performance is independent of factors of emotional intelligence. Hence the null hypothesis that there is no significant relationship between factors of emotional intelligence and academic achievement among engineering students is accepted. It confirms the findings of O'Connor Jr. and Little (2003) that emotional intelligence is not an important indicator of academic achievement.

## Conclusion

In recent years, Emotional Intelligence (EI) has been a popular topic of discussion in the field of management. Some authors asserted that emotional intelligence predicts success at school and college. However, little empirical research has been conducted to test this assertion. In this study, only one factor of emotional intelligence i.e. non-verbal messages was significantly associated with gender and background, emotional management was significantly associated with gender whereas other factors were not significantly associated with both gender and background. Schooling of the college students did not exert any impact on factors of emotional intelligence of college students. The results also revealed that academic performance of engineering students is independent of factors of emotional intelligence.

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## Appendix

**Table 4 : Monte Carlo Parallel Analysis**

| S. No | Random Eigenvalue | Standard deviation | Calculated Eigen values for the components |
|---|---|---|---|
| 1 | 1.9247 | 0.0726 | 4.510 |
| 2 | 1.7897 | 0.0588 | 2.002 |
| 3 | 1.6924 | 0.0468 | 1.953 |
| 4 | 1.6111 | 0.0421 | 1.728 |
| 5 | 1.5399 | 0.0353 | 1.601 |
| 6 | 1.4779 | 0.0345 | 1.481 |
| 7 | 1.4137 | 0.0331 | 1.404 |
| 8 | 1.3614 | 0.0330 | 1.248 |
| 9 | 1.3056 | 0.0277 | 1.174 |
| 10 | 1.2521 | 0.0280 | 1.126 |
| 11 | 1.2031 | 0.0250 | 1.047 |
| 12 | 1.1572 | 0.0269 | 1.003 |
| 13 | 1.1107 | 0.0252 | 0.980 |
| 14 | 1.0648 | 0.0205 | 0.959 |
| 15 | 1.0209 | 0.0232 | 0.952 |
| 16 | 0.9792 | 0.0247 | 0.842 |
| 17 | 0.9369 | 0.0229 | 0.815 |
| 18 | 0.9015 | 0.0233 | 0.784 |
| 19 | 0.8647 | 0.0221 | 0.755 |
| 20 | 0.8279 | 0.0226 | 0.694 |
| 21 | 0.7891 | 0.0220 | 0.672 |
| 22 | 0.7559 | 0.0202 | 0.636 |
| 23 | 0.7184 | 0.0210 | 0.569 |
| 24 | 0.6858 | 0.0225 | 0.523 |
| 25 | 0.6536 | 0.0206 | 0.503 |
| 26 | 0.6200 | 0.0237 | 0.492 |
| 27 | 0.5852 | 0.0218 | 0.479 |
| 28 | 0.5493 | 0.0210 | 0.420 |
| 29 | 0.5162 | 0.0192 | 0.395 |
| 30 | 0.4801 | 0.0191 | 0.344 |
| 31 | 0.4437 | 0.0231 | 0.335 |
| 32 | 0.4080 | 0.0216 | 0.297 |
| 33 | 0.3590 | 0.0247 | 0.281 |

**Table 5 : Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.510 | 13.668 | 13.668 | 4.510 | 13.668 | 13.668 |
| 2 | 2.002 | 6.065 | 19.733 | 2.002 | 6.065 | 19.733 |
| 3 | 1.953 | 5.917 | 25.651 | 1.953 | 5.917 | 25.651 |
| 4 | 1.728 | 5.236 | 30.886 | 1.728 | 5.236 | 30.886 |
| 5 | 1.601 | 4.852 | 35.738 | 1.601 | 4.852 | 35.738 |
| 6 | 1.481 | 4.487 | 40.225 | 1.481 | 4.487 | 40.225 |
| 7 | 1.404 | 4.254 | 44.479 | | | |
| 8 | 1.248 | 3.783 | 48.262 | | | |
| 9 | 1.174 | 3.556 | 51.818 | | | |
| 10 | 1.126 | 3.411 | 55.229 | | | |
| 11 | 1.047 | 3.172 | 58.402 | | | |
| 12 | 1.003 | 3.039 | 61.441 | | | |
| 13 | 0.980 | 2.970 | 64.411 | | | |
| 14 | 0.959 | 2.906 | 67.317 | | | |
| 15 | 0.952 | 2.884 | 70.200 | | | |
| 16 | 0.842 | 2.551 | 72.751 | | | |
| 17 | 0.815 | 2.468 | 75.220 | | | |
| 18 | 0.784 | 2.376 | 77.596 | | | |
| 19 | 0.755 | 2.288 | 79.883 | | | |
| 20 | 0.694 | 2.102 | 81.985 | | | |
| 21 | 0.672 | 2.035 | 84.020 | | | |
| 22 | 0.636 | 1.928 | 85.948 | | | |
| 23 | 0.569 | 1.723 | 87.671 | | | |
| 24 | 0.523 | 1.585 | 89.256 | | | |
| 25 | 0.503 | 1.526 | 90.782 | | | |
| 26 | 0.492 | 1.491 | 92.273 | | | |
| 27 | 0.479 | 1.453 | 93.726 | | | |
| 28 | 0.420 | 1.272 | 94.998 | | | |
| 29 | 0.395 | 1.196 | 96.194 | | | |
| 30 | 0.344 | 1.041 | 97.235 | | | |
| 31 | 0.335 | 1.015 | 98.250 | | | |
| 32 | 0.297 | 0.900 | 99.150 | | | |
| 33 | 0.281 | 0.850 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

**Table 6 : Component Matrix(a)**

| | Component | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| I motivate myself by imagining a good outcome to task I take on. | .540 | | | | .382 | .317 |
| I easily recognize my emotions as I experience. | .507 | | | -.457 | | |
| By looking at their facial expressions, I recognize the emotions people are experiencing. | .491 | .399 | | | | |
| When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself. | .483 | | | | | |
| When I experience a positive emotion, I know how to make it last. | .474 | | | | | |
| I present myself in a way that makes a good impression on others | .453 | .339 | | | | |
| I can tell how people are feeling by listening to the tone of their voice. | .445 | .343 | | | | |
| I arrange events others enjoy. | .438 | | | .335 | | |
| Emotions are one of the things that make my life worth living. | .434 | | | | -.398 | |
| When my mood changes, I see new possibilities | .412 | -.384 | | | | |
| I used good moods to help myself keep trying in the face of obstacles. | .394 | | .362 | | -.343 | |
| When I feel a change in emotions, I tend to come up with new ideas. | .389 | | | -.344 | | |
| Other people find it easy to confide in me. | .382 | | | .329 | | |
| I complement others when they have done something well. | .378 | | | | .331 | |
| I expect good things to happen. | .373 | | .363 | | | |
| I help other people feel better when they are down. | .368 | | | | | |
| I have control over my emotions. | .322 | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| When I am in a positive mood, I am able to come up with new ideas. | .446 | -.449 | | | | .386 |
| I know what other people are feeling just by looking at them | .356 | .435 | | | | |
| Some of the major events of my life have led me to re-evaluate what is important and non- important. | | -.366 | | | | |
| I know when to speak about my personal problems to others | | .360 | | | | |
| I know why my emotions change | | -.353 | | | | |
| When I am faced with a challenge, I give up because I believe I will fail. | | | .639 | | | |
| I find it hard to understand the non- verbal messages of other people. | | | -.494 | | | |
| It is difficult for me to understand why people feel the way they do. | | | .421 | | | |
| I like to share my emotions with others. | | | | .477 | | |
| I am aware of the non- verbal messages I send to others. | | | | .385 | .461 | |
| I am aware of the non-verbal messages other people send | .343 | | | | .365 | -.353 |
| I seek out activities that make me happy. | | | | | -.328 | |
| When I am faced with obstacles, I remember times I faced similar obstacle, and overcome them. | .359 | | .333 | | | -.467 |
| I am aware of my emotions as I experience them. | .397 | | | | | -.458 |
| I expect that I will do well on most things I try. | | | | | | .409 |

Extraction Method: Principal Component Analysis.

a. 6 components extracted.

**Table 7 : Factors of Emotional Intelligence**

| S.No | Components | Factor |
|---|---|---|
| 1 | I motivate myself by imagining a good outcome to task I take on. | Emotional Management |
| 2 | I easily recognize my emotions as I experience. | |
| 3 | By looking at their facial expressions, I recognize the emotions people are experiencing. | |
| 4 | When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself. | |
| 5 | When I experience a positive emotion, I know how to make it last. | |
| 6 | I present myself in a way that makes a good impression on others | |
| 7 | I can tell how people are feeling by listening to the tone of their voice. | |
| 8 | I arrange events others enjoy. | |
| 9 | Emotions are one of the things that make my life worth living. | |
| 10 | When my mood changes, I see new possibilities | |
| 11 | I used good moods to help myself keep trying in the face of obstacles. | |
| 12 | When I feel a change in emotions, I tend to come up with new ideas. | |
| 13 | Other people find it easy to confide in me. | |
| 14 | I complement others when they have done something well. | |
| 15 | I expect good things to happen. | |
| 16 | I help other people feel better when they are down. | |
| 17 | I have control over my emotions. | |
| 18 | When I am in a positive mood, I am able to come up with new ideas. | Awareness |
| 19 | I know what other people are feeling just by looking at them. | |
| 20 | Some of the major events of my life have led me to re-evaluate what is important and non- important. | |
| 21 | I know when to speak about my personal problems to others | |
| 22 | I know why my emotions change | |
| 23 | When I am faced with a challenge, I give up because I believe I will fail. | Negative Outlook |

| | | |
|---|---|---|
| 24 | I find it hard to understand the non- verbal messages of other people. | |
| 25 | It is difficult for me to understand why people feel the way they do. | |
| 26 | I like to share my emotions with others. | Non-Verbal Messages |
| 27 | I am aware of the non- verbal messages I send to others. | |
| 28 | I am aware of the non-verbal messages other people send | |
| 29 | I seek out activities that make me happy. | |
| 30 | When I am faced with obstacles, I remember times I faced similar obstacle, and overcome them. | Positive Outlook |
| 31 | I am aware of my emotions as I experience them. | |
| 32 | I expect that I will do well on most things I try. | |