# Role Of Emotional Intelligence, Perceived Stress, Learning Motivation and Learning Strategies For Academic Performance Of Engineering Students In Trivandrum

<table>
<thead>
<tr>
<th>Paper ID</th>
<th>IJIFR/V3/ E10/ 023</th>
<th>Page No.</th>
<th>3683-3690</th>
<th>Subject Area</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keywords</td>
<td>Trait Emotional Intelligence, Perceived Stress, Self-Regulated Learning, Motivation to Learn, Learning Strategies, Academic Performance, Engineering Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Role and Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Reney P. Varghese</td>
<td>Life Skills Trainer &amp; PhD Research Scholar, Centre for Futures Studies, Gandhigram Rural Institute - Deemed University, Gandhigram, Tamil Nadu, South India</td>
</tr>
<tr>
<td>2nd</td>
<td>Dr. T. Selvin Jebaraj Norman</td>
<td>Professor, Centre for Futures Studies, Gandhigram Rural Institute - Deemed University, Gandhigram, Tamil Nadu, South India</td>
</tr>
<tr>
<td>3rd</td>
<td>Dr. H. Samuel Thavaraj</td>
<td>Assistant Professor, Department of Rural Industries &amp; Management, Gandhigram Rural Institute - Deemed University, Gandhigram, Tamil Nadu, South India</td>
</tr>
</tbody>
</table>

## Abstract

A vast array of research has been conducted to explore the relationship between motivation to learn and learning strategies (Chang, 2005; Pintrich, 1989; 1995; 1999). Emotional aspects which are unconscious but important for sustaining and determining the motivational orientation has not been investigated in many cases. During the past, identifying the best predictors of academic performance has been a major concern of both researchers and educators. The purpose of this study was to test the relationships between Emotional Intelligence, Perceived Stress, and Motivation to Learn, Learning Strategies and Academic Performance among undergraduate engineering students in Trivandrum, India. For this purpose, 130 students were randomly selected based on their own choice to participate in the study. Trait Emotional Intelligence, Perceived Stress and Motivational Strategies for
learning questionnaires were used. The results showed that Emotional Intelligence, Perceived Stress and Motivation to Learn have highly significant positive correlation with academic performance. Test Anxiety and Learning Strategies were also significantly associated with academic performance. But gender difference was not significant for the all the measures of scales.

1. INTRODUCTION

Self-regulation of cognition and behavior is an important predictor of student learning and academic performance (Corno & Mandinach, 1983; Corno & Rohrkemper, 1985). Academic performance could be predicted more accurately based on assessment of a variety of individual differences, not just the past achievement and cognitive capacity. Factors including motivation to learn and self-regulatory learning strategies have also been found to predict academic performance, controlling the effects on intelligence and personality (e.g., Chamorro-Premuzic & Furnham, 2008; Robbins, Lauver, Le, Davis, Langley, and Carlstrom, 2004).

Emotional intelligence has emerged as an outcome of two branches of psychological research during the past forty years. The first being cognition and affect. That means how cognitive and emotional processes interact to enhance thinking (Bower, 1981; Isen, Shalker, Clark, & Karp, 1978; Zajonc, 1980). The second was an evolution in models of intelligence itself. Instead of viewing intelligence strictly as how well one engaged in analytical tasks associated with memory, reasoning, judgment, and abstract thought, theorists and investigators began considering intelligence as a broader array of mental abilities (e.g., Cantor & Kihlstrom, 1987; Gardner, 1983; Sternberg, 1985).

In order to clarify the non-intellective factors which influence the academic performance, it is worthwhile to explore how the students’ emotional intelligence and perceived stress are related to their motivation to learn and use of learning strategies.

1.1 Motivation To Learn and Learning Strategies


Student motivation is considered a dynamic, multifaceted phenomenon (Eccles, Wigfield, & Schiefele, 1998; Graham & Weiner, 1996; Seifert, 2004). Pintrich and Schunk (2002)
had defined that, motivation is the process whereby goal-directed activity is instigated and sustained. This definition consists of variables which is used as operational indices in motivation research namely, (1) Task choice (i.e. ability to choose task based on the desired results), (2) Effort (i.e. action oriented process), (3) Persistence (i.e. to continue with efforts overcoming obstacles) and (4) Achievement (i.e. increasing the level of quality of above elements to raise standards of achievement).

### 1.2 Emotional Intelligence and Academic Performance

In the recent years Emotional Intelligence (EI) has been a popular topic in the academic literature (Charbonneau & Nicol, 2002; Ciarrochi, Deane, & Anderson, 2002; Mayer, Salovey, & Caruso, 2000; Palmer, Donaldson, & Stough, 2002; Petrides & Furnham, 2003; Roberts, Zeidner, & Matthews, 2001; Saklofske, Austin, & Minski, 2003). Key literature in the field of Emotional Intelligence (EI) highlights the crucial distinction between two conceptualizations: Trait EI (or ‘trait emotional self-efficacy’) and ability EI (or ‘cognitive emotional ability’). Trait EI refers to emotion-related behavioral dispositions and self-perceived abilities (Petrides, 2011). The operationalization of the construct through self-reports is consistent with the subjectivity of emotions and the nature of Trait EI as part of the personality domain. In contrast, Ability EI refers to emotion related abilities (Salovey & Mayer, 1990), it is directly linked to the intelligence domain, and is measured through maximum-performance tests. Schutte et al. (1998) had reported that scores on a self-report measure of emotional intelligence conducted at the beginning of the academic year significantly predicted grade point average at the end of the year. Moreover, Parker and colleagues (Parker et al., 2004; Parker, Summerfeldt, Hogan, & Majeski, 2004) have reported slightly direct correlations between Trait EI and Academic Performance in high school as well as university samples, which points to the fact that the effects of Trait EI may vary across educational levels as well as across subjects, like those of other personality traits (e.g. Heaven, Ciarrochi, & Vialle, 2007; Laidra, Pullmann, & Allik, 2007; Petrides, Chamorro-Premuzic, Frederickson, & Furnham, 2005).

### 1.3 Perceived Stress and Academic Performance

Hackett et al. (1992) identified both perceived stress and academic self-efficacy as predictors of cumulative grade-point average (GPA) for traditional students enrolled in engineering schools. Good grades were associated with low perceived stress and high self-efficacy. Generally, the most harmful effect of stress is disrupting thinking and learning performance (Grandy et al., 1989, Goldstein, 1980, Akbari et al., 2011). Too much stress is likely to distract from learning (Grandy et al., 1988, Heins, Fahey, & Leiden, 1984) and may also influence student’s performance and decision making capabilities.

### 1.4 The Present Study

The different performance models briefly reviewed above, reveal the relationship of the constructs of Trait Emotional Intelligence, Self-Regulated Learning and Perceived Stress.
to Academic Performance. In several previous researches, the relationships between these constructs and academic performance had been explored individually. The present paper aims to examine the moderating role of Trait Emotional Intelligence and Perceived stress in relation to academic performance as measured by GPA, among the undergraduate engineering students.

2. METHODOLOGY

2.1 Participants
The respondents of this study consisted of 130 (55 males and 75 females) undergraduate engineering students studying in a self-financing engineering college in Trivandrum, India. A random sample of students during the semester seven of 2015 volunteering to participate in the pilot study was selected and given the questionnaires. Students ranged from 20 to 22 years of age; the mean age was 20.87 years (SD=0.546) for males and 20.87 years (SD=0.475) for females.

2.2 Measures
The participating students were administered a survey questionnaire consisting of four sections. The first section of the survey questionnaire recorded demographics of the participants, which had questions on age, gender, course satisfaction, income and self-reported GPA, followed by the TEIQue-SF (Trait Emotional Intelligence Questionnaire), MSLQ (Motivated Strategies for Learning Questionnaire) and PSS-14 (Perceived Stress Scale). Cronback alpha was used as a measure of internal consistency and reliability of the MSLQ subscales. Only subscales with reliability indexes above or close to 0.7 were used.

2.2.1 Trait Emotional Intelligence Questionnaire – Short Form
TEIQue-SF (Petrides, 2009; Sevdalis, Petrides & Harvey, 2007) is a 30-item questionnaire designed to measure Global Trait Emotional Intelligence (Trait EI). It is based on the long form of the TEIQue. Participants are asked to rate their degree of agreement with each item on a seven-point Likert Scale. The Global Trait EI score is calculated by summing up the item scores and dividing the total number of items. It can also yield a score for four factors of trait EI, i.e. well-being, self-control, emotionality and sociability.

2.2.2 Motivated Strategies For Learning Questionnaire
MSLQ (Pintrich, Smith, Garcia, & McKeachie, 1991) is an 81-item self-report instrument developed at the University of Michigan which assesses college students’ motivational orientations and their use of different learning strategies in a college course on a seven-point Likert Scale. The 81-items are categorised into two major scales: the motivation to learn scale and the learning strategies scale. Each major scale consists of a set of sub-scales. The motivation to learn scale includes 31 items assessing students’ goals and value beliefs, their beliefs about their skills to succeed and their anxiety about tests. The learning strategies scale consists of 31 items regarding students’ use of different...
cognitive and meta-cognitive strategies, and 19 items concerning student management of different resources. Since MSLQ in this study was used to measure the general academic efficacy, the measure was reworded to reflect that general orientation.

2.2.3 Perceived Stress Scale
Perceived stress scale (Cohen, Kamarck, & Mermelstein, 1983) is a fourteen-item scale designed to measure the degree to which individuals appraise their life as stressful. It is scored on a five-point Likert Scale.

3. RESULTS
SPSS was used for analysing the data. Cronback alpha was calculated to check the reliability of the Likert scales and adequate reliability was found (TEIQone-SF 0.836 n=30, PSS-14 0.703 n=14, Motivation to Learn 0.898 n=26, Test anxiety 0.684 n=5, Learning strategies 0.906 n=31). Even though the reliability index of test anxiety was 0.684, it was used. To ascertain any difference among the male and female, we compared the two subgroups with t-test. There were no significant gender differences in the scores on all measures of assessment. The cGPA mean was 7.28 (SD 0.622), the minimum and maximum being 5.60 and 8.85 respectively.

Pearson Product-Moment Correlation Coefficient was calculated for measuring correlation. On analysing the variables, we found that Test Anxiety correlated positively with perceived stress, while the correlation with Global Trait EI was negative. Perceived stress also showed significant negative correlation with Global Trait EI. A significant positive correlation was found between Global Trait EI and Academic Performance or cGPA. Motivation to Learn was also found to have a significant positive correlation with Academic Performance. There also exists a significant correlation between Learning Strategies and Academic Performance (Table 1).

A linear regression analysis was performed to examine statistically the relationship between cGPA and other dependent variables. The results of the regressions analysis obtained value of R being 0.87 which indicates a good level of prediction. The value of R² (Coefficient of Determination) indicates that our independent variables can explain 75% of the variability of our dependent variable (Table 2).

<table>
<thead>
<tr>
<th>Variable</th>
<th>cGPA</th>
<th>Motivation to Learn</th>
<th>Learning Strategies</th>
<th>Test Anxiety</th>
<th>Perceived Stress</th>
<th>Global Trait Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>cGPA</td>
<td>1</td>
<td>.630**</td>
<td>.352**</td>
<td>-.182*</td>
<td>-.760**</td>
<td>.762**</td>
</tr>
<tr>
<td>Motivation to Learn</td>
<td></td>
<td>1</td>
<td>.457**</td>
<td>-.112*</td>
<td>-.421**</td>
<td>.517**</td>
</tr>
<tr>
<td>Learning Strategies</td>
<td>.352**</td>
<td>1</td>
<td></td>
<td>-.053*</td>
<td>-.229**</td>
<td>.435**</td>
</tr>
<tr>
<td>Test Anxiety</td>
<td>-.182*</td>
<td>-.112*</td>
<td>-.053*</td>
<td>1</td>
<td>0.109*</td>
<td>-.192*</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>-.760**</td>
<td>-.421**</td>
<td>-.229**</td>
<td>0.109*</td>
<td>1</td>
<td>-.674**</td>
</tr>
<tr>
<td>Global Trait Intelligence</td>
<td>.762**</td>
<td>.517**</td>
<td>.435**</td>
<td>-.192*</td>
<td>-.674**</td>
<td>1</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Table 2: Regression Model Summary

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>.87</td>
<td>.749</td>
<td>.743</td>
<td>125.13</td>
<td>.000*</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Global Trait Intelligence, Motivation to Learn, Perceived Stress  
b. Dependent Variable: cGPA

Table 3: Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std., Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>6.030</td>
<td>.446</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation to Learn</td>
<td>.053</td>
<td>.010</td>
<td>.281</td>
<td>5.346</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>-.087</td>
<td>.013</td>
<td>-.415</td>
<td>-6.814</td>
</tr>
<tr>
<td>Global Trait Intelligence</td>
<td>.238</td>
<td>.046</td>
<td>.337</td>
<td>5.229</td>
</tr>
</tbody>
</table>

a. Dependent Variable : cGPA

4. DISCUSSION
It was found that, all the independent variables of academic self-efficacy (SRL) like Motivation to Learn, Learning Strategies and Emotional Self Efficacy (Trait EI) significantly predicted student’s academic behaviours and attitudes as measured by the cGPA. These findings support the work of previous researchers who found that both cognitive and affective variables influenced students’ achievement, behaviours and attitudes (Field, 2001; Khramtsova et al. 2007; Lyubomirsky, 2001; Salami, 2004; Wong, Wong & Chau, 2001). Students who had high self-efficacy by having less perceived stress, high emotional intelligence and who were happy were motivated to participate in relevant academic activities and developed positive attitudes that led to success in college.

5. CONCLUSION
The present research provided support for the relationship between Trait EI, Perceived Stress, Motivation to Learn, Learning Strategies and Academic Performance in a sample of undergraduate engineering students in Trivandrum, India. However, it will be essential to replicate these findings in a larger and more heterogeneous sample of students. Therefore, the conclusions drawn should be considered as tentative and an elaborate model incorporating various sub factors of motivational variables should be empirically tested. The possibility that constructs such as goal setting, self-efficacy, and intrinsic motivation might occupy an intermediate position between individual difference predisposition and the choice of self-regulatory strategies depending upon the specific characteristics of the learning contexts, which should be further explored. The intention of the study was to bring to attention some deep connections between Self-Regulated Learning and Trait Emotional Intelligence, rather than providing definitive answers.
6. REFERENCES


