Pertanika J. Soc. Sci. & Hum. 24 (S): 119 – 130 (2016)

PERTANIKA JOURNALS

SOCIAL SCIENCES & HUMANITIES

Journal homepage: http://www.pertanika.upm.edu.my/

Relationship between Emotional Intelligence and University Students' Attitude

Yusof, N. S. H. C.[1]*, Yap, B. W.[2], Maad, H. A.[2] and Hussin, W. N. I. W.[3]

[1]Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA (Kelantan), 18500 Machang, Kelantan, Malaysia

[2]Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia

[3]School of Applied Psychology, University of Nottingham (Malaysia Campus), 43500 Semenyih, Selangor, Malaysia

ABSTRACT

"Attitude is the key to success" is an age-old saying and widely used in education to indicate that attitude may lead towards academic success. This exploratory study aims to investigate emotional intelligence of university students and their attitudes. The study involves a survey using self-administered questionnaire. The sample comprised 324 Malay undergraduate students studying at a university located in the East Coast of Malaysia. The emotional intelligence of undergraduate students was assessed using Schutte Emotional Intelligence Scale (SEIS) while their attitude was evaluated using a Student Attitude Scale. Second order Confirmatory Factor Analysis (CFA) model was implemented to test the factorial validity of the Emotional Intelligence and Student Attitude constructs. CFA results confirmed the four-factor structure of SEIS and three factor structure of Student Attitude scale. The Structural Equation Modeling results demonstrated that emotional intelligence has a weak positive effect on students' attitude.

Keywords: Emotional intelligence, students' attitude, second-order CFA, structural equation modelling

ARTICLE INFO

Article history:
Received: 24 February 2016
Accepted: 30 September 2016

E-mail addresses:
syaliza648@kelantan.uitm.edu.my (Yusof, N. S. H. C.),
beewah@tmsk.uitm.edu.my (Yap, B. W.),
hamdan@tmsk.uitm.edu.my (Maad, H. A.),
w.nurulizza@gmail.com (Hussin, W. N. I. W.)
* Corresponding author

ISSN: 0128-7702

INTRODUCTION

In a developing country, education is important for economic growth and social advancement. Educated individuals are expected to be valuable assets to the country and society.

Determinants of academic performance have been the subject of ongoing debate

among educators, academicians and policy makers. Most studies have reported the significant effects of teacher and school factors, students' attitude, socio economic, family background, and language proficiency on students' academic achievement (Pajares & Schunk, 2001; Zahyah, 2008; Baharudin & Zulkefly, 2009; Kamariah, Rohani, Rahil, Habibah, Wong, & Ahmad Fauzi, 2010). Several other studies have reported significant factors as well, such as: self-efficacy (Schunk, 1991; Zimmerman, Bandura, & Martinez-Pons 1992; Pajares, 1996; Zajacova, Lynch, & Espenshade, 2005; Gore, 2006; Adeyemo, 2007); stress (Zajacova et al., 2005; Gore, 2006; Adeyemo, 2007; Yasin & Dzulkifli, 2011); and emotional intelligence (Wong, Wong, & Chau, 2001; Adeyemo, 2007; Ferrando, Prieto, Almeida, Ferrandiz, Bermejo, Lopez-Pina, Hernandez, Sainz, & Fernandez, 2011; Saroja, 2011). More recently there has been interest in the impact of social and emotional competency on academic achievement; and it has been found that there are strong connections between emotional intelligence and academic achievement (Goleman, 1995).

Interest in emotional intelligence was spurred by the idea that cognitive ability alone is insufficient to explain human behaviour and success. Goleman, (1995) claims that possessing a high IQ is not enough to determine one's success in work and life as there are also personal qualities that need to be taken into account and important for success.

The term "emotional intelligence" coined by the American psychologists, Peter Salovey and John D. Mayer in 1990 refers to "the ability to monitor one's own feelings and emotions and those of others, to discriminate among them, and to use this information to guide one's thinking and actions". It includes the ability to accurately perceive emotions in order to assist thoughts, to understand emotions and to reflectively regulate emotions to promote emotional and intellectual growth.

While, attitudes are emotionalized sets that can influence behaviour by referring to all situations or objects to which they are related. In other word, it is one's attitude towards something or someone involving feelings of like or dislike, trust or distrust and attraction or repulsion (Sarwar, 2004).

In a study in Nigeria, it was reported that emotional intelligence, self-efficacy, happiness and life satisfaction over and above depression predicted college students' behaviour and attitude. It was discovered that students who were happy, high in self-efficacy and good in controlling their emotions were motivated to participate in relevant academic activities and had developed positive attitudes that can lead to academic success (Salami, 2010).

The effect of hope, self-efficacy, English anxiety, teachers' factor and students' attitude on academic achievement was investigated by Fairoze (2011). The exploratory analysis on attitudes scale

extracted three factors structure for the students' attitude scale. This study found that hope and teacher's factor have significant positive effect on student's self-efficacy. However, students' attitude did not have a significant effect on their self-efficacy.

Although a plethora of research has been conducted on emotional intelligence the last two decades, recent researchers question the validity of emotional intelligence instruments suggesting they have unstable factor structure (Van Rooy, Whitman, & Viswesvaran, 2010; Sharma, Gangopadhyay, Austin, Mandal, & Louis, 2013). The replication of validation study on a different population would help to verify the measure's utility beyond that of the inventory developers' setting (Kaplan & Saccuzzo, 2009). Therefore, this study is important as it also tests the factorial validity and applicability of the Schutte Emotional Intelligence Scale (SEIS) by Schutte, Malouff, Hall, Haggerty, Cooper, Golden, & Dornheim (1998) in Malaysia.

This study first investigates the factorial validity of emotional intelligence and students' attitude constructs, and then determines the relationship between emotional intelligence and university students' attitude specifically among the Malay students. In addressing this issue, the following hypotheses were developed and investigated.

H1: The four-factor structure of emotional intelligence is valid

H2: The three-factor structure of students' attitude is valid

H3: There is a significant positive relationship between emotional intelligence and students' attitude

MATERIAL AND METHODS

Research Design

The design of this survey research is to investigate the relationship between emotional intelligence and students' attitude. The participants are 1015 Malay undergraduate students from a local university located in East Coast of Malaysia, using proportionate stratified sampling of three faculties. The data was collected using a structured questionnaire and 500 questionnaires were distributed to undergraduates while class was in session. A total of 361 set of questionnaires were returned out of which 324 were used for further analysis.

Research Instrument

The structured questionnaire consists of three sections which are Section A: Respondent's background information; Section B: Emotional Intelligence (EI) scale and Section C: Student's Attitude scale.

Schutte Emotional Intelligence Scale (SEIS). Emotional intelligence scale (SEIS) was adopted from Schutte et al., (1998) and has 33 items with a response scale of "strongly disagree" (1) to "strongly

agree" (5). Out of 33 items, there are 30 positive and only 3 negative items. In this study, items B5, B28 and B33 were recoded as they are negatively correlated with other items due to statement B5 ("I find it hard to understand the nonverbal messages of other people"), B28 ("When I am faced with a challenge, I give up because I believe I will fail") and B33 ("It is difficult for me to understand why people feel the way they do") being negative statements. The 33 items represented the conceptual model of Salovey and Mayer (1990) in which 13 items measure the appraisal and expression of emotion category, 10 items for the regulation of emotion category and 10 items for the utilization of emotion category. An internal consistency (Cronbach's alpha) of 0.90 for the 33-item scale was reported by Schutte et al., (1998). There are many arguments on the dimensions of SEIS. In a study on SEIS involving 260 university students, principal components analysis using both orthogonal and oblique rotation extracted four components. The four components are optimism, appraisal of emotions, social skills and utilisation of emotions (Petrides and Furnham, 2000). EFA was done by Saklofske, Austin, and Minski (2003) to extract the components for emotional intelligence and they also support the four factors obtained by (Petrides and Furnham, 2000).

Student's Attitude Scale (SA). This study measures students' attitude towards learning and behaviour in class. The Students' Attitude (SA) scale was adopted from Fairoze (2011) and consists of 18 items with a response scale of "definitely false" (1) to "definitely true" (8). Out of 18 items, there was one negative item. Item C2 ("Class is very boring for me") was recoded as it is a negative statement whereas the others are positive statements. The Cronbach's alpha reported by Fairoze (2011) was 0.861 for the 18- items scale and Exploratory Factor Analysis using a sample of 196 undergraduate students extracted three factors which are teamwork, presentation and internet usage. The Cronbach's alpha for all three factors were 0.86, 0.88 and 0.64 respectively. Table 1 summarizes the number of items for each construct of this study.

Table 1
Constructs and number of items

Construct	Number of items	Label
Emotional Intelligence (EI)	33	B1 – B33
Student's Attitude (SA)	18	C1 – C18

Statistical Analysis

Cronbach's alpha was used in this study to determine the reliability of the EI and SA constructs. A pilot study involving 33 randomly selected undergraduate students revealed Cronbach's alpha of 0.765 and 0.605 for EI and SA respectively. Then, the actual survey was carried out. The descriptive analysis for the demographic profile was performed using IBM SPSS

Statistics 18.0. The measurement model for emotional intelligence and students' attitude constructs were checked for reliability and validity using Confirmatory Factor Analysis (CFA). The validity of constructs was examined using convergence validity and discriminant validity. Furthermore, CFA using IBM SPSS AMOS 18.0 was carried out to test the first order and second- order factor model of EI and SA as well as to determine the relationship between them.

Participants

Out of 324 respondents, 246 (76%) are female and only 78 (24%) are male respondents. The students are in Semester 2(30%), Semester 3(19%), Semester 4(24%), Semester 5(18%) and Semester 6(9%). For age group distribution, 111 (34%) respondents are age less than 21 years while 213 respondents (66%) are age more than 22 years.

RESULTS AND DISCUSSION

Reliability Analysis

The Cronbach's alpha was used in order to assess the internal consistency reliability for each constructs. The values for EI and SA are 0.879 and 0.800 respectively, and exceeded 0.70 indicating that the items are reliable for measuring the respective constructs. Kline (1999) claimed that when dealing with psychological constructs, values of Cronbach's alpha below 0.7 can realistically be expected because of the diversity of the constructs that were measured even though the general accepted value ranges from 0.7 to 0.8.

Factorial Validity of the Emotional Intelligence Construct

Confirmatory factor analyses were performed using IBM SPSS AMOS 18.0 to assess the validity and reliability of the EI measurement model. The EI scale is measured by four factors which are optimism, appraisal of emotions, emotions utilization and social skills. Figure 1 illustrates the first-order four-factor structure model and Table 2 summarizes the model fit before and after modification which involve deletion of items that have low factor loadings to achieve better data-to- model fit. The initial model did not fit the data well ($\chi 2$ (428df) =1582.007, $p < 0.05$, $\chi 2/df=3.696$) and the fit indices (GFI=0.767, AGFI=0.730, CFI=0.661) were below 0.90 while RMSEA= 0.091. Therefore, some modifications were needed to improve the goodness of fit of the model. The modifications involve deletion of items with low factor loadings (Hair, Black, Babin, and Anderson, 2010). Since the sample size is greater than 200, items which have factor loadings below 0.50 were dropped (Hair et al., 2010). The initial standardized loading showed that 7 items (B19, RB28, B11, RB5, RB33, B4 and B1) have a standardized loading below 0.50 and these items were deleted.

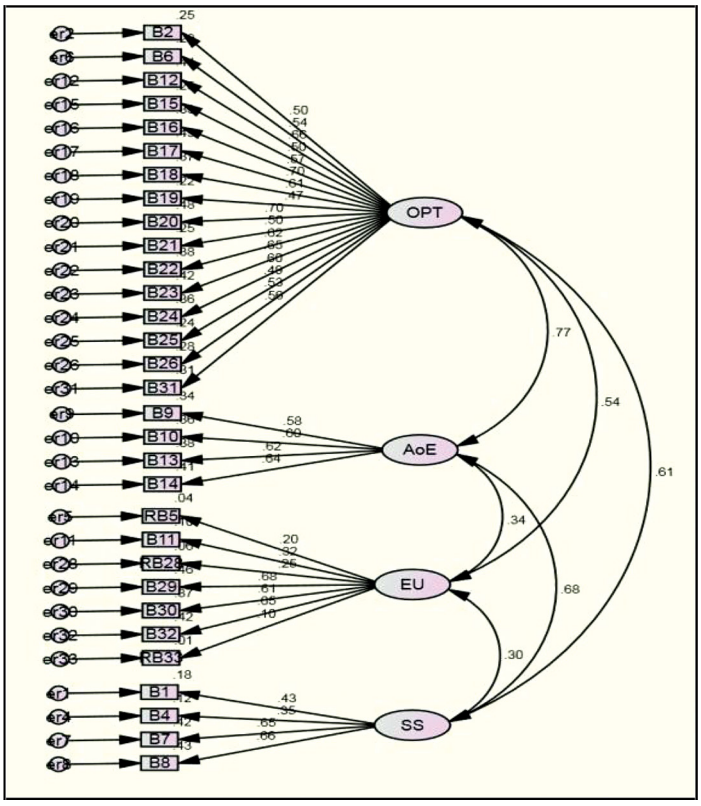

Figure 1. EI four factors first-order CFA model

The modification indices (MIs) also identified 4 items (B15 and B25, B12 and B26) with correlated errors. The items B15 "I am aware of the nonverbal messages I send to others" and B25 "I am aware of the nonverbal messages other people send", B12 "When I experience a positive emotion, I know how to make it last" and B26 "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" questions are quite similar to each other. Even though they are similar, these four items are important in explaining the emotional intelligence, thus the modification by allowing errors to be correlated were done rather than deletion of items. The model fit improves with better fit indices (GFI=0.823, AGFI=0.782, CFI=0.781, RMSEA=0.087, χ^2 (244df) =846.221, $p < 0.05$, $\chi 2/df=3.468$). A value of RMSEA about 0.08 or less indicates reasonable error of approximation (Kline, 2005).

Factorial Validity of the Students' Attitude Construct

Students' attitude was measured by three factors which are participation, presentation and reading preference. Figure 2 illustrates the first-order three-factor structure model

and Table 2 shows the model fitness before and after modification is done. The overall model Chi-square (χ^2(116df)) was 644.999 with $p < 0.05$, χ^2/df = 5.56, GFI=0.814, AGFI=0.755, CFI=0.728 and RMSEA= 0.119. A value of χ^2/df between 2 to 5 indicates that the model is acceptable (Hair et al., 2010). Thus, the result showed a very poor fit of the model to the data and some modifications were needed to improve model fit.

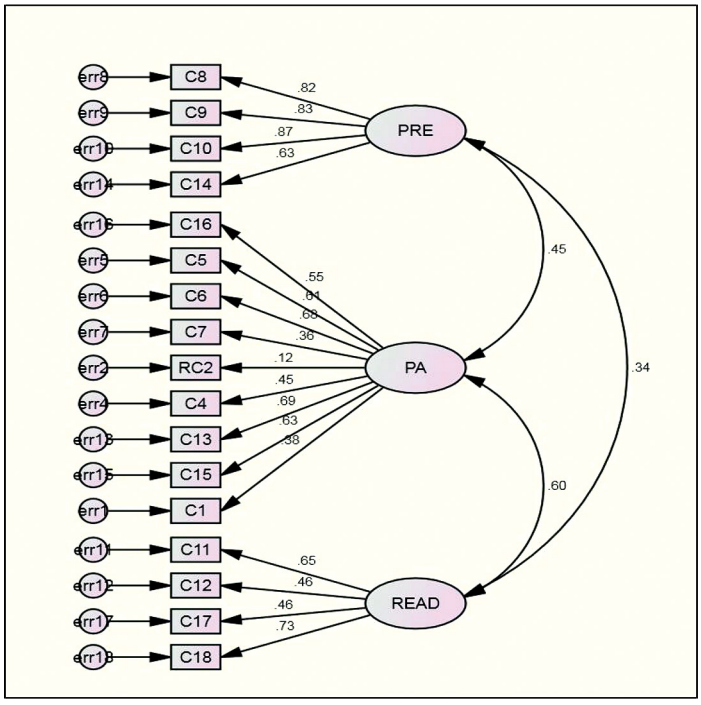

Figure 2. SA three factors first-order CFA model

Based on standardized loadings below 0.50, 6 items (RC2, C1, C4, C7, C12 and C17) were dropped from the model. The MIs showed that two pair of items: (C15, C16) and (C5, C6) have correlated errors. Since item C15 "I keep on studying and improving my grades in test and exam", C16 "If I have trouble in understanding any topics in the class, I use lots of different strategies to help me understand such as asking friend and meet the lecturer personally after class", C5 "I enjoy discussing and studying in group with others" and C6 "I come to my group prepared and ready to contribute" are important to measure student's attitude in general, therefore the items were not removed but modification was done by correlating the error terms.

After modification, the overall model chi-square (χ^2) was 172.876 with 39 degrees of freedom, $p < 0.05$, and $\chi^2/df = 4.433$. Other measures of fit indices namely GFI (0.916), AGFI (0.857), and CFI (0.908) indicate that the model is acceptable. The root mean square error of approximation (RMSEA) is 0.103.

Table 2
Summary Fit Indices (First-Order Model)

Model		χ^2/df	RMSEA	GFI	CFI	AGFI
Emotional Intelligence	Initial	3.696	0.091	0.767	0.661	0.730
	Final	3.468	0.087	0.823	0.781	0.782
Students' Attitude	Initial	5.560	0.119	0.814	0.728	0.755
	Final	4.433	0.103	0.916	0.908	0.857

The second-order CFA was then performed for both EI intelligence and SA construct. The EI second-order model is composed of four first-order latent constructs. Meanwhile, the second-order model for SA is composed of three first-order constructs. The results for the second-order CFA are show in Table 3. The fit indices show that both second-order models have reasonable fit and reasonable error of approximation.

Table 3
Summary Fit Indices (Second-Order Model)

Model	χ^2/df	RMSEA	GFI	CFI	AGFI
Emotional Intelligence	3.510	0.088	0.821	0.775	0.781
Students' Attitude	4.433	0.103	0.916	0.908	0.857
Overall	3.425	0.087	0.760	0.724	0.725

A CFA of overall measurement model was then conducted to test the adequacy of the measurement model involving both EI and SA constructs. The overall measurement model is done to observe the covariance structure for all latent constructs together. The measurement model does not fit well (GFI=0.760, AGFI=0.725, CFI=0.724, RMSEA=0.087, $\chi^2/df=3.425$). Although the fit indices (GFI, AGFI and CFI) for the overall measurement model are not above the 0.9 threshold, the model is acceptable as this is an exploratory study. The RMSEA and χ^2/df is less than 5, thus indicating the measurement model can be accepted.

The correlation between emotional intelligence and students' attitude (0.42) indicates a significant weak positive relationship exists between them. Figure 3 presents the path diagram the measurement model with two second-order constructs.

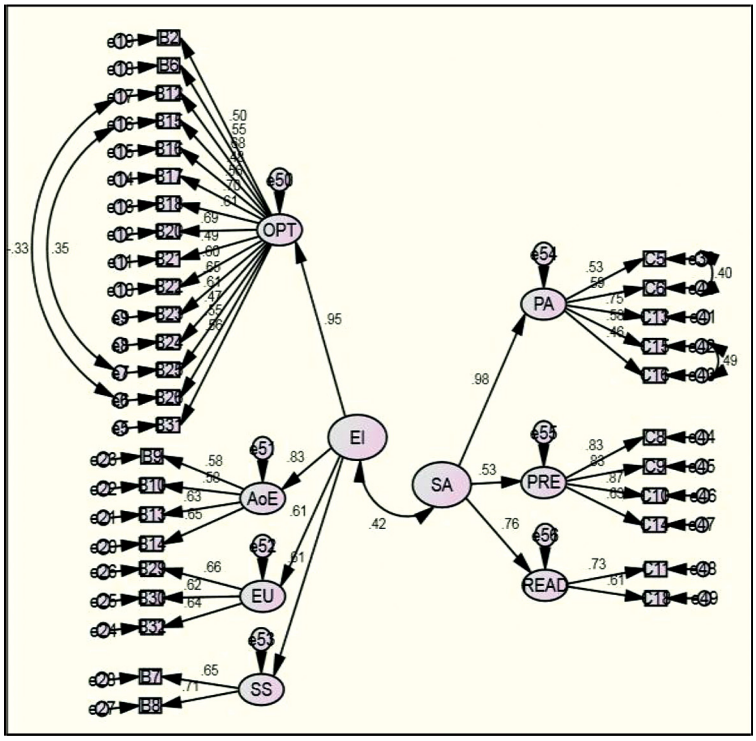

Figure 3. Measurement model

Convergent Validity and Discriminant Validity

Table 4 presents the AVE, CR and SIC (squared inter- construct correlation) for each construct in this study. The rule of thumb to satisfy discriminant validity is the AVE for each construct should be larger than corresponding Squared Inter-Construct Correlation (SIC) (Hair et al., 2010). The AVE values for the constructs are 0.582 for emotional intelligence and 0.611 for students' attitude while the construct reliability for each construct is 0.843 and 0.816 respectively. Since the AVE values are greater than SIC (0.173), these conclude discriminant validity has been established. The AVE are larger than 0.5 and construct reliability also greater than 0.70 indicates that the EI and SA constructs are reliable and valid.

Table 4
Summary of AVE, CR and SIC

Construct	Emotional Intelligence	Students' Attitude
Emotional Intelligence	**0.582**	
	(0.843)	
Students' Attitude	0.173	**0.611**
		(0.816)

Notes: Boldface values on diagonal are AVEs; Construct Reliability (CR) values in parentheses and orthogonal values are SIC

CONCLUSIONS

This study examined the relationship between emotional intelligence and the attitude of undergraduates. Confirmatory Factor Analysis was used to validate the components of the Emotional Intelligence and components of Students' Attitude. This study supports the findings by Petrides and Furnham (2000) as four factors were extracted from the EI scale which is optimism, appraisal of emotions, emotions utilization and social skills. Additionally, three factors were extracted from the Students' Attitude scale (participation, presentation and reading preference). However, the items for the three factors are differ with the findings by Fairoze (2011). Convergence and discriminant validity results showed that the constructs are distinct, reliable and valid. Since the measurement model does not fit well, this study needs to be replicated and more data needs to be collected to further validate the model. This exploratory study found that there is a significant weak positive relationship between emotional intelligence and student's attitude indicating students with positive emotions would tend to have positive attitudes and behaviours in class. Similarly, with the finding found by Güven (2016) in his study that weak positive relationship between the attitudes of the students towards using the media and ICT tools in learning English and their emotional intelligence. While, Parimala and Pazhanivelu (2015) reported that students' attitude towards science have moderates impact on emotional intelligence. Emotional intelligence is an important determinant of factors such as attitude, self-efficacy, happiness, satisfaction, leadership and performance. Recently, Elipe, Mora-Merchán, Ortega-Ruiz, and Casas (2015) reported that perceived emotional intelligence moderates the relationship between cyber bullying victimization and its emotional impact.

REFERENCES

Adeyemo, D. A. (2007). Moderating Influence of Emotional Intelligence in the Link Between Academic Self-efficacy and Achievement of University Students. *Psychology and Developing Societies 19(2),* 199-213.

Baharudin, R., & Zulkefly, N. S. (2009). Relationships with Father and Mother, Self-Esteem and Academic Achievement amongst College Students. *American Journal of Scientific Research, 6,* 86-94.

Elipe, P., Mora-Merchán, J. A., Ortega-Ruiz, R., & Casas, J. A. (2015). Perceived Emotional Intelligence as a moderator variable between cyber victimization and its emotional impact. *Front Psychol, 6,* 1-11. doi: 10.3389/fpsyg.2015.00486

Fairoze, S. (2011). *Investigating the Psychological Variables Effect on Perception of Self-Efficacy and Student's Performance*. (Unpublished Master dissertation). Universiti Teknologi MARA, Shah Alam, Malaysia.

Ferrando, M., Prieto, M. D., Almeida, L. S., Ferrándiz, C., Bermejo, R., López-Pina, J. A., ... Fernández, M. C. (2011). Trait Emotional Intelligence and Academic Performance: Controlling for the Effects of IQ, Personality and Self-Concept. *Journal of Psychoeducational Assessment, 29(2),* 150-159.

Goleman, D. (1995). *Emotional Intelligence*. New York: Bantam Books.

Gore, P. A. J. (2006). Academic Self-Efficacy as a Predictor of College Outcomes: Two Incremental Validity Studies. *Journal of Career Assessment, 14*(1)*,* 92-115.

Güven, Z. Z. (2016). The Relationship between University Students' Attitudes towards ICT and Media Tools in Learning English and their Emotional Intelligence. *Journal of Selcuk Communication, 9*(3), 17-33.

Hair, J. J., Black, B., Babin, B., & Anderson, R. E. (2010). *Multivariate Data Analysis: A Global Perspective* (7th Ed.). Prentice Hall.

Kamariah, A. B., Rohani, A. T., Rahil, M., Habibah, E., Wong, S. L., & Ahmad Fauzi, M. A. (2010). Relationships between University Students' Achievement Motivation, Attitude and Academic Performance in Malaysia. *Procedia Social and Behavioral Sciences, 2*(2), 4906-4910.

Kaplan, R. M., & Saccuzzo, D. P. (2009) *Psychological Testing Principles, Applications, and Issues.* (7th Ed.). Belmont, CA: Wadsworth.

Kline, P. (1999). *The Handbook of Psychological Testing* (2nd ed.). London: Routledge.

Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling*. The Guilford Press: New York.

Pajares, F., & Schunk, D. H. (2001). The Development of Academic Self-Efficacy. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation*. San Diego: Academic Press.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research, 66(4),* 543-578.

Parimala, M., & Pazhanivelu, G. (2015). Relationship between Emotional Intelligence and Attitudes towards Science in Equity Education. *International Journal of Advanced Research in Education and Technology, 2*(3), 161-162.

Petrides, K. V., & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and Individual Differences, 29*(2)*,* 313 -320.

Saklofske, D. H., Austin, E. J., & Minski, P. S. (2003). Factor structure and validity of a trait emotional intelligence measure. *Personality and Individual Differences, 34*(4)*,* 707 -721.

Salami, S. O. (2010). Emotional Intelligence, Self-Efficacy, Psychological Well-Being and Students' Attitudes: Implications for Quality Education. *European Journal of Educational Studies 2*(3), 247-257.

Salovey, P., & Mayer, J. D. (1990). Emotional Intelligence. *Imagination, Cognition and Personality, 9*(3)*,* 185-211.

Saroja, B. (2011). Study of Anxiety Proneness and Emotional Intelligence in Relation to Academic Achievement of Pre-University Students. *International Referred Research Journal, 11*(22), 1-5.

Sarwar, M. (2004). *Relationship of Student Attitude and Academic Performance of Students at Secondary Level in Punjab*. (Doctoral Dissertation) Arid Agriculture University, Pakistan.

Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist, 26*(3-4)*,* 207-231.

Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences, 25*(2)*,* 167-177.

Sharma, S., Gangopadhyay, M., Austin, E., Mandal, M. K., & Louis, S. (2013). Development and validation of a situational judgment test of emotional intelligence. *International Journal of Selection and Assessment*, *21*(1), 57–73.

Van Rooy, D. L., Whitman, D., & Viswesvaran, C. (2010). Emotional intelligence: Additional questions still unanswered. *Industrial and Organizational Psychology, 3*(2), 149–153.

Wong, C., Wong, P., & Chau, S. (2001). Emotional intelligence, students' attitude towards life and the attainment of education goals: An explanatory study in Hong Kong. *New Horizons in Education- the Journal of Education, Hong Kong Teachers Association, 44*(1), 11.

Yasin, M. A. S. M., & Dzulkifli, M. A. (2011). Differences in Depression, Anxiety and Stress between Low and High Achieving Students. *Journal of Sustainability Science and Management, 6*(1)*,* 169-178.

Zahyah, H. (2008). The Relationship Between Aspects of Socio-Economic Factors and Academic Achievement. *Jurnal Pendidikan, 33(2008),* 95-105.

Zajacova, A., Lynch S. M., & Espenshade, T. J. (2005). Self-Efficacy, Stress and Academic Success in College. *Research in Higher Education, 46*(6)*,* 677-704.

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-Motivation for Academic Attainment: The Role of Self-Efficacy Beliefs and Personal Goal Setting. *American Educational Research Journal*, *29*(3)*,* 663-676.