

A Model of the Relationships among Emotional Intelligence, Spiritual Intelligence, and Holistic Individual Characteristics Among Malaysian Adolescents

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Abstract

Adolescents are the future, yet they are faced with many challenges in navigating their life. The present cross-sectional study was conducted to examine the relationship of Emotional Intelligence and Spiritual Intelligence to Holistic Individual Characteristics among Malaysian adolescents. A sample of 395 Form Four students were selected using the stratified random sampling method. Two survey questionnaires adopted and adapted from established scales were used to collect data. A pilot study was done to test the reliability and validity of the resultant adapted scales. Data from the main study was analysed for descriptive statistics using IBM SPSS version 27. The data were also analysed using the Structural Equation Modelling (SEM) methodology with IBM Amos version 27 as the tool. All measurement models were validated through the pooled confirmatory factor analysis (CFA). A second order CFA done confirmed that Emotional Intelligence and Spiritual Intelligence were important component factors of Holistic Individual Characteristics. The fitness indices achieved the required level, specifically, the value of RMSEA= 0.041, GFI=0.982, CFI=0.980, TLI=0.970, CMIN/DF=1.645 and $P= 0.037$; while the β values showed that the most important component factor was Emotional Intelligence ($\beta= 0.794$) as compared to Spiritual Intelligence ($\beta= 0.774$). This study findings lend evidence to the importance of these constructs in shaping the holistic individual among Malaysian adolescents. It can help relevant authorities and parents to actually focus their efforts in developing the younger generation. Besides that, this study finding also helps to fill in the gap of theoretical knowledge in the area of emotional intelligence and spiritual intelligence in relation to holistic individual development as well as in terms of its methodology of analysis.

Keywords: emotional intelligence, spiritual intelligence, holistic individual characteristics

Developing the younger generation into well rounded balanced and holistic individuals has been accepted as the need of the twenty-first century. In tandem with this, Malaysian national education seeks to produce individuals who

are intellectually, spiritually, emotionally and physically balanced and harmonious (Ministry of Education Malaysia, 2019).

Besides that, one of the quality standards of Malaysian Education that needs to be achieved is to produce holistically educated students that can achieve the full potential of knowledge, skills, competence, noble values, responsibility and personal well-being (Ministry of Education Malaysia, 2018). In view of these aspirations, this study sought to identify significant factors that may help relevant bodies to implement evidence-based efforts to develop adolescents holistically. Specifically, the purpose of this study was to examine the relationship of Emotional Intelligence and Spiritual Intelligence to Holistic Individual Characteristics among Malaysian adolescents.

Adolescents and Development

Conceptually, adolescence is observed as a distinct transition period in a person's life. It is a time of change and transformation from a child to young adult during which a person achieves a new degree of psychological and emotional independence from adults and competence as an individual (Bonnie & Backes, 2019). In other words, adolescence marks a critical phase in the process of self-making, during which the adolescents create an outline of the self, create a stable identity and identify their roles and later, emerge as adults (Sanders, 2013).

However, in understanding the development of adolescents, Santrock (2016), specifically mentioned two ways, namely, the biopsychosocial approach, which involves an interaction of psychological, biological and social factors, and the developmental psychopathology approach which focusses on describing and exploring the developmental pathway of problem behaviour.

Adolescent development can also be viewed according to a few other perspectives. Among them is the sociological perspective which sees the norms of behaviour, culture, social rituals, group pressure or even technological factors influencing the development of adolescents; and the psychological perspective which focuses on factors of the self, like self-identity, self-esteem, confidence, self-worth, self-efficacy and life goals and values. Youth needs to experience and mature in an environment that balance between individuality and connectedness to important others. A development process which does not follow the 'normal' or 'typical' pathway may result in dysfunctional behaviour (Allen, Gray, McNerny, Ryan & Waters, 2014; Boyd & Bee, 2012; Santrock, 2016).

The Holistic Individual

Humans have been created such that there are many aspects to a wholesome individual. In order to live well in this world, people have to draw upon their physical, emotional, spiritual as well as their cognitive or mental capacity. Another way of looking at it is that people possess multiple intelligences to help them interact and survive in the world they live in.

Theories of Multiple Intelligences

Some researchers have defined intelligence as a single, general ability, while others view that intelligence includes a range of aptitudes, skills, and

talents. For example, Spearman proposed that to understand the mind was to understand it as a whole, that is 'g' or general intelligence (Beaujean & Benson, 2019). Meanwhile, Thurstone (1887–1955) viewed intelligence as consisting of seven primary abilities (Christodoulou, Davis, Seider & Gardner, 2011, p. 486) which were verbal comprehension, word fluency, number facility, spatial visualization, associative memory, perceptual speed and reasoning (Beaujean & Benson, 2019, p. 201).

However, according to Santrock (2016), two theories of multiple intelligences were proposed by Sternberg (1986, 2004, 2010, 2012, 2013, 2014a, b; 2015a,b,c) and Gardner (1983, 1993, 2002, 2014). Sternberg (2014b) described intelligence as the ability to adapt to, select environments and shape them such that they become more suitable for their skills and desires (cited in Santrock, 2016). The multiple intelligences proposed by Sternberg are the Analytical, Creative and Practical. Gardner on the other hand, proposed eight types of intelligences, namely, Verbal, Mathematical, Spatial, Bodily-kinaesthetic, Musical, Interpersonal, Intrapersonal and Naturalist (Santrock, 2016).

Two types of intelligences are being investigated in this study, in relation to being a holistic individual namely, the emotional and spiritual ones. Specifically, this study seeks to explore the relationship between Emotional and Spiritual Intelligences to Holistic Individual Characteristics.

Emotional Intelligence

According to Beauvais et.al. (2014), Emotional Intelligence was defined by Salovey and Mayer (1997) as the capacity to reason with emotion in four areas: perceive emotion, integrate emotion in to thoughts, understand emotion, and manage emotion (Beauvais et.al, 2014).

It is important to understand the distinctive difference between emotions and Emotional Intelligence. Emotion is a natural instinctive state of mind that derives from our current and past experiences and situations. They originate in our environment, circumstances and knowledge, as well as our moods and relationships. Emotional Intelligence, on the other hand, is an ability. It involves the skill and awareness to know, recognize, and understand feelings, moods, and emotions, and use them in a positive way. It also involves learning how to manage feelings and emotions, and use that information to behave and act, including making decisions, solving problems, self-management and leading others (Faltas, 2017).

On the subject of emotional intelligence constituting the self-regulation and control over emotions, Al-Ghazali proposed that the self is composed of four different aspects, namely, *Ruh* (soul or inner self), *Aql* (intellect or mind), *Nafs* (the desire-nature or ego), and *Qalb* (heart). 'Ruh' is the spiritual entity. The Qalb as the spiritual heart, is where the ruh settles (Kemahli, 2017; Santra, 2016). Al-Ghazali also proposed that the Nafs is divided into three levels, namely *Al-Nafs Ammarah*, *Al-Nafs Lawammah* and *Al-Nafs Muthmainnah*. *Al-Nafs Ammarah* is the drive for self-satisfaction, including anger and lust. *Al-Nafs Lawammah* compromises between the self-desires and the desire for norms. Finally, the *Al-*

Nafs Muthmainnah is the calm condition of the ‘nafs’ whereby it follows norms and values and is under self-control (Thahir & Hidayat, 2020). Thus, controlling desires and emotions is very significant in preserving bodily, mental and spiritual health.

The importance of emotional intelligence on being a holistic well-adjusted person has been shown in many research findings. For instance, studies have shown that emotional intelligence was a significant predictor of delinquent behaviour (Chong, Lee, Roslan, & Baba, 2015), had significant correlations with psychological well-being and moderated the relationship between neuroticism, extraversion, and psychological well-being (Salami, 2011). In addition, it even mediated the relationship between insecure attachment to adults and subjective health outcomes (Marks, Horrocks, & Schutte, 2016).

Another study found that aggressive behaviour correlated negatively with trait emotional intelligence, and the emotionality, well-being, and self-control factors or aspects of trait emotional intelligence (Sanchez-Ruiz & Baaklini, 2018). Emotional intelligence intrapersonal and interpersonal aspects, were also significantly negatively correlated to problem behaviour (Yap, Koh, Yap, Tan & Gan, 2019).

Gardner and Qualter (2009) explored emotional intelligence and borderline personality disorder criteria (BPD) in 523 nonclinical adults. They discovered that persons with BPD traits are deficient in multiple aspects of emotional intelligence, especially management of one’s emotions. Findings from another study by Schneider, Lyons, and Khazon (2013) showed that generally emotional intelligence conferred stress resilience.

In a meta-analysis study to reaffirm the relationship of emotional intelligence with health, it was found that trait emotional intelligence was a general predictor of health. But it is more associated with mental and psychosomatic health than with physical health, such as predicting bulimic symptoms over and above body dissatisfaction (Cuesta-Zamora et.al, 2018; Martins et.al., 2010).

Goleman’s Emotional Intelligence Theory

The theoretical underpinnings for emotional intelligence in this study is the Goleman’s Emotional Intelligence Theory needed to be discussed. According to Goleman (1995), emotional intelligence determines the potential for learning by five elements or capacity namely self-awareness, self-regulation, motivation, empathy and social skills or the ability to adapt in the relationship. In turn, emotional intelligence produces twenty-five emotional competences, which are divided into personal competence and social competence. Based on this theory adolescents who have high emotional intelligence would have good personal and social competence.

To sum, according to this perspective, emotional intelligence is an ability to recognize and understand one’s emotions and emotional reactions, to regulate and manage them, and understand their effects on others. It also involves the ability to communicate well and to empathise. Emotional intelligence is the

driving force for a person to behave for the sake of fulfilling one's intrinsic personal needs and goals.

Spiritual Intelligence

According to Devi et.al (2016), Wigglesworth (2002) conceptualized spiritual intelligence to be the ability to behave with compassion and wisdom while maintaining inner and outer peace (equanimity) regardless of the circumstances. Spiritual intelligence is therefore a necessary personal empowerment, which enables one to maintain both inner and outer peace and display love regardless of the circumstances (Devi, Rajesh & Devi, 2016).

It is also noted that spiritual intelligence is different from morality. Spiritual intelligence implies a sense of the spirituality not denoted by religious affiliation but by an awakening to self, to others and to an understanding of roles of responsibility with creative thinking and a certain pragmatism concerning solutions. It is also seen as a sense of inner worth and value for oneself and the world and beyond. Morality on the other hand, implies good actions and integrity (Westenberg, 2017).

Spiritual intelligence is related to how to maintain and develop a spirit of the self. It also includes the concept of respect and understanding of all forms of life and the universe (Buzan, 2001). In addition, according to Hanefar et.al, (2015), based on the content analysis of the writings of Al-Ghazali and Langgulung (1986), spiritual intelligence is related to understanding the purpose or meaning of life, knowing one's real self and living consciously with a clear mind, transcendence, spiritual resources, self-determination, soul purification and coping with obstacles.

Spiritual intelligence too has been found to have influence on individuals becoming holistically well-adjusted persons. For example, in a study, it was found that spiritual intelligence, and not spirituality, is the predictor of wellbeing (Amran & Dyer, 2008). It affects part of the system of personality and psychosocial domains. Both are among the aspects that can trigger anti-social behavior and influences the level of life adjustment among the adolescents (Devi et al, 2016).

In addition, in an investigation by Ebrahimi, Jalilabadi, Chenagh, Amini and Arkian (2015) on the effects of spiritual intelligence training on adolescents' mental health, it was found that those who had undergone spiritual training components came out significantly better in depression, anxiety and stress. These results indicated that the training of spiritual intelligence components had a significant impact on depression, anxiety, and stress in adolescents. On the other hand, Hasan and Shabani (2013) conducted a study on high school students and found that spiritual and emotional intelligences were negatively related with mental health problems.

Besides that, it is not just the spiritual intelligence of adolescents themselves that has effect on their well-being. In another study that involved parents, it was found that parents' spiritual intelligence was a powerful predictor

of adolescents' psychological safety, whereby it accounted for 84.1% variance (Arnout, Alkhatib, Abdel Rahman & Pavlovic, 2019).

Emmons' Spiritual Intelligence Theory

In this study, the theoretical underpinning of Spiritual Intelligence is the Emmons' Spiritual Intelligence Theory. According to Emmons (2000), there are five components of spirituality identified, namely:

- i. The capacity to transcend the physical and material.
- ii. The ability to experience heightened states of consciousness.
- iii. The ability to sanctify everyday experience.
- iv. The ability to utilize spiritual resources to solve problems.
- v. The capacity to be virtuous.

In summary, Spiritual Intelligence in adolescents will enable them to experience and be aware of things beyond what is apparent and sanctify events and actions. But most important of all, it enables them to use spiritual resources for coping strategies and solving problems, as well as be the driving force to always behave virtuously.

Relationship between Emotional Intelligence and Spiritual Intelligence

It is imperative to stress the difference between spiritual and emotional intelligence even though they are co-related and may seem to be two sides of the same coin. Spiritual intelligence is concerned with the inner life of mind and spirit and its relationship to being in the world. Spiritual intelligence opens the heart, illuminates the mind and inspires the soul, connecting the individual human psyche to the underlying ground of being.

Meanwhile emotional intelligence is the ability to adaptively identify, understand, manage and harness emotions both in the self and others and to use emotions to facilitate cognitive processing.

Spiritual intelligence is related to emotional intelligence in so far as spiritual practice includes developing intrapersonal and interpersonal sensitivity (Devi, et al., 2016).

Objectives of the Study

The objectives of the study were:

1. To examine the relationship between Emotional Intelligence and Spiritual Intelligence among Malaysian adolescents.
2. To explore the relationship of Emotional Intelligence and Spiritual Intelligence to Holistic Individual Characteristics among Malaysian adolescents.

Research Questions

Research questions for this study were as follows:

1. What is the relationship between Emotional Intelligence and Spiritual Intelligence among Malaysian adolescents?

2. What is the relationship of Emotional Intelligence and Spiritual Intelligence to Holistic Individual Characteristics among Malaysian adolescents?

Research Hypotheses

Hypothesis 1.

Based on the Multiple Intelligence Theories and on the relationship between Emotional Intelligence and Spiritual Intelligence discussed in the previous sections, hypothesis 1 is as follows:

H₁: There is a significant correlation between Emotional Intelligence and Spiritual Intelligence among Malaysian adolescents.

Hypothesis 2.

Based on the Multiple Intelligence Theories, Goleman's Emotional Intelligence Theory, and on Emmons' Spiritual Intelligence Theory which were presented in earlier sections, and also, study findings discussed in the previous sections, hypothesis 2 is as follows:

H₂: Emotional Intelligence and Spiritual Intelligence are important factors of Holistic Individual Characteristics among Malaysian adolescents.

Methodology

Research Design

This research is a cross-sectional design study. It is a descriptive research or more specifically, a correlational study using the techniques of survey questionnaire. This design was thought to be most appropriate since the study is on variables that may have developed over a number of years under certain circumstances.

The questionnaire method of collecting data was chosen because it is most suitable to investigate the research questions in this study. The nature of the problem under investigation required a large sample and the most effective and efficient way of collecting data was by the use of a questionnaire as it saves time and money and it can be self-administered besides, the anonymity of respondents is virtually guaranteed, thus facilitating a more objective data collection (Salkind, 2006).

Research Population, Sampling Procedure and Sample Size

The research population of this study was secondary school students aged average 16 years who were in Form Four, in the state of Selangor and Wilayah Persekutuan Kuala Lumpur, Malaysia. The target population of Form Four students comprised of 66,606 students in Selangor State (Jabatan Pendidikan Negeri Selangor, 2020) and 15,973 in Kuala Lumpur (Jabatan Pendidikan Wilayah Persekutuan Kuala Lumpur, 2020).

This population was selected because they are a good representation of the adolescents, are all undergoing the national curriculum that is the Secondary School Standard Curriculum (*Kurikulum Standard Sekolah Menengah - KSSM*)

as their counterparts in other states and are not facing any high-stake national examinations.

The method used to determine the sample is multistage cluster sampling. It is the most time-efficient and cost-efficient probability design for large geographical areas. It is also easy to be used from the practicality point of view (Department of Statistics, Pennsylvania State University, 2021). It is also especially useful in educational research since it is very unlikely that administrative approval to randomly select and remove a few students from many classrooms for the study can be obtained. There is a much better chance of securing permission if the sample is taken from several intact classrooms (Gay et al., 2012).

The initial sample comprised of 418 students from schools in Selangor and Kuala Lumpur. The students were from multi-ethnic backgrounds, regardless of place and religion, irrespective of socioeconomic background.

A few ways of determining a representative sample size were utilized. The first way was by using the Krejcie and Morgan (1970) table for sample sizes required for different population sizes. From this table, a sample of 384 would be required for a population of 82,579 Form Four students. Besides that, Raosoft sample size calculator indicates that for population of 82,579 and margin error of 5% (confidence level of 95%), the recommended sample size is 383. For survey research, it is common to sample 10% to 20% of the population. Beyond a certain point (about $N=5,000$), the population size is almost irrelevant and thus, a sample size of 418 will be adequate (Gay, Mills & Airasian, 2012).

However, after doing data screening for missing and unacceptable data as well as outliers, the final sample size was 385 respondents. This sample size is still within the acceptable limits.

Procedure for Data Collection

Permission was obtained from the Malaysian Ministry of Education and the respective school Principal in order to conduct the study in the selected schools. It is important to state that the researchers were present to oversee all data collection in schools so as to minimise common method bias.

Before the questionnaires were distributed, a short briefing was given to the teachers who helped to manage the participant students. Then, an explanation was given to the students as to the objective of the survey and the questionnaires involved. It was made very clear that no personal details would be collected. Their consent to participate was then obtained by signing the consent form.

Data Analyses

Descriptive analysis. Firstly, SPSS Version 27 was used to compute descriptive analysis of the field data. This included analysing the demographic frequencies, Cronbach alpha values of scales and identifying outliers.

Confirmatory factor analysis. Confirmatory factor analysis (CFA) using IBM Amos was done in two parts. The first analysis, the pooled CFA was done to validate the measurement models. Subsequently, a second order CFA was done

to confirm the relationship between the constructs Emotional Intelligence, Spiritual Intelligence and Holistic Individual Characteristics.

The CFA is part of the Structural Equation Modelling (SEM) methodology. SEM is a robust statistical analysis that facilitates the discovery and confirmation of relationships among multiple variables. The most important strength of SEM is that the relationships among numerous latent constructs can be examined in a way that reduces the error in the model.

Instruments

To measure the constructs involved in this study, two scales were adapted from existing established scales, rated using a five-point Likert Scale. The instruments were allowed to be used for research. The two scales were Emotional Intelligence Scale to measure the construct Emotional Intelligence; and the Spiritual Intelligence Scale to measure the construct Spiritual Intelligence. One self-developed form was constructed to be used for the participants' demographic data.

The Emotional Intelligence Scale was adapted from the Assessing Emotions Scale (AES) for Measuring Emotional Intelligence (Schutte, Malouff, & Bhullar, 2009). Its original reliability was $\alpha=.90$. The original AES instrument comprised of 33 items. However, these were adapted such that the instrument used in this study consisted of only 23 items, considering the suitability of the items for the sample's age group as well as Malaysian context.

Besides that, the Spiritual Intelligence Scale was adapted from Spiritual Intelligence Self -Report Inventory by King (2008) consisting of 24 items; and the Integrated Spiritual Intelligence Scale (ISIS) by Amram and Dryer (2008) consisting of 45 items. Their original reliabilities were $\alpha=.92$ and $\alpha=.97$ respectively. However, both inventories were originally used for undergraduates. As such, the items in both inventories were adapted to suit the adolescent sample used in this study, in terms of length as well as complexity of the items. The final number of items in this study's Spiritual Intelligence Scale were 14 items.

The Pilot Study

Although all the instruments were adapted from established scales with acceptable reliabilities, a pilot study was carried out in order to verify their validity and reliability before using them in the main study. The pilot study was done with a sample of fifty students with the same characteristics as the targeted population. However. After data screening was done, the number of respondents for each scale ranged from 45 to 50 respondents.

Reliability of Scales

The reliability of scales was computed using the Cronbach Alpha. It was found that in the Cronbach Alpha value of Emotional Intelligence Scale was $\alpha=0.89$ and that of Spiritual Intelligence Scale was $\alpha=0.85$. Both values showed that reliability of the scales were acceptable. As such, no items were deleted from the scale and they were used in the main study.

Means and Standard Deviation

Table 1
Means and Standard Deviations of Scales

Scale	N	Min	Max	Mean	Std. Deviation
Emotional Intelligence Scale	47	3.17	4.87	4.04	.42
Spiritual Intelligence Scale	49	2.50	4.93	3.74	.56

From the results in Table 1, it can be seen that the mean and standard deviation of Emotional Intelligence Scale was ($M = 4.87$, $S.D = .42$) while that of Spiritual Intelligence Scale was ($M = 4.93$, $S.D = .56$). As such, it can be seen that the emotional and spiritual intelligence for this cohort of respondents were high.

Validity of Scales

There are three types of validity which can be used to establish the trustworthiness of the instrument in this study, namely, face validity, content validity and construct validity.

Face validity. Briefly, for face validity, the scales used in this pilot study had been used in numerous studies on adolescents as well as other groups of respondents for their respective purposes. The Emotional Intelligence Scale was adapted from the Assessing Emotions Scale (AES) for Measuring Emotional Intelligence (Schutte, et al., 2009). Its original reliability was $\alpha = .90$.

Besides that, the Spiritual Intelligence Scale was adapted from Spiritual Intelligence Self -Report Inventory by King (2008) and the Integrated Spiritual Intelligence Scale (ISIS) by Amram and Dryer (2008). Their original reliabilities were $\alpha = .92$ and $\alpha = .97$ respectively.

Content validity. For content validity, the instrument in this pilot study was checked and vetted by two experts (academia) in the field of Counselling Psychology, and quantitative research methods. The scales were then edited accordingly before finalising them to be used in the pilot study.

Construct validity. To determine construct validity in a more concrete way, the statistical tool, SPSS, was used to analyse the degree of Pearson correlation (r) among all the items of each scale. Items must have Pearson Correlation Coefficient value, r , .3 or more with at least one other item in the scale. Otherwise, it was considered to have low correlation (Blunch, 2013) and should be excluded from the scale. However, for the scales in this study, the r coefficient values of all items were acceptable. Thus, all the items were included in the scales for the main study.

Bivariate analysis of the scales was also conducted using Pearson one-tailed correlation r-coefficient to determine the directions and magnitudes between the variables measured by their respective scales. The results showed that correlation coefficient between Emotional Intelligence Scale and Spiritual Intelligence Scale was .656 ($p=0.01$).

In sum, the values of the Pearson's Correlation coefficient between the scales indicate that they have good construct validity and could be used in the main study.

Assessment and Validation of Measurement Models

Inter-item Correlation of Scales

Although the selection of items was done during the process of determining reliability of the scales based on pilot study data, the items inter-correlations needed to be checked again based on the field data (Blunch, 2013).

Thus, inter-item correlation was done using the Pearson correlation test. Items that did not have Pearson Correlation Coefficient, $r > .3$ with any other items in the scale were considered to have low correlation (Blunch, 2013) and were excluded for further analysis.

Multicollinearity

Multicollinearity arises from the situation where two or more variables are so highly correlated that they both, essentially, represent the same underlying construct (Bryne, 2016). In this study, multicollinearity of the constructs Emotional Intelligence and Spiritual Intelligence were tested using IBM Amos version 27 to determine the correlation between them when doing the Pooled CFA for these constructs. If the correlation coefficient is $< .8$, there is no multicollinearity. As for the VIF, the value should be < 10.0 and tolerance values must be > 0.1 . (Hair et.al, 2013).

From the analysis, it was found that the correlation coefficient between the two constructs was .62 ($p=0.001$), Thus, there was no multicollinearity between the constructs.

The values of VIF and Tolerance were computed using SPSS version 27. It was found that the VIF value was 1.0 and the Tolerance value was also 1.0. Thus, again this showed that there was no multicollinearity between the constructs.

Reliability of Scales

In order to use the SEM methodology, the reliability of the scales needed to be verified again based on the field data. An acceptable internal consistency value is important in order to use Structural Equation Modelling (SEM) method of analysis and an adequate value of Cronbach alpha need to be $\alpha > .70$ (Kline, 2015).

From the analysis, the Cronbach Alpha value of Emotional Intelligence was $\alpha = .83$ and that of Spiritual Intelligence was $\alpha = .78$. Thus, both scales achieved the accepted Cronbach alpha value and SEM method could be used for further analysis.

Normality

Severe non-normality biases parameter estimates, test results and fit measures. Thus, the raw data needs to be examined before embarking on further analysis (Blunch, 2013). To test for normality, the skewness and kurtosis values were analysed. It was found that there were no extreme values of skewness and kurtosis and normal distribution of all constructs were acceptable to be estimated by Maximum Likelihood Estimator.

Assessment and Validation of Measurement Models

In this study, Confirmatory Factor Analysis (CFA) needed to be done in two steps. The first step was to validate each measurement model of each latent construct Emotional Intelligence and Spiritual Intelligence; and the second step was the second order CFA to test the hypotheses. The CFA method has the ability to assess unidimensionality, validity and reliability of the measurement model (Awang, 2015).

Measurement Models Fitness Indices. Firstly, the assessment of measurement models was done using the pooled CFA method. The model fitness indices used in these analyses are CMIN/DF which is from the Parsimonious Fit category, GFI and RMSEA from the Absolute Fit category, and CFI and TLI from the Incremental Fit category. For the model fitness to be acceptable, the values of CMIN/DF should be < 5.0 , GFI > 0.90 , CFI > 0.90 , TLI > 0.90 and RMSEA should be < 0.08 (Awang, 2015).

From Table 2, it can be seen that the fitness indices of the measurement models Emotional Intelligence and Spiritual Intelligence were that the values of RMSEA and GFI from the Absolute Fit category were .039 and .930 respectively; the value of CFI and TLI from the Incremental Fit category were .954 and .945 respectively; and the value of CMIN/DF from the Parsimonious Fit category was 1.598. Thus, the required level of all indices has been achieved for all measurement models. This shows that the model fitted the data collected in the main study.

Table 2.

Fitness Indices of Measurement Models

Name of Category	Name of Index	Index value	Comments
Absolute Fit	RMSEA	.039	Required level chieved
	GFI	.930	Required level chieved
Incremental Fit	CFI	.954	Required level chieved
	TLI	.945	Required level chieved
Parsimonious Fit	CMIN/DF	1.598	Required level chieved

p=0.000

Unidimensionality, Validity and Reliability. The following sections present the analysis for unidimensionality, validity and reliability of the measurement models, namely convergent validity, discriminant validity and composite reliability.

Firstly, during the process of getting the required level of model fitness values, redundant items have been deleted, based on the suggested Modification Indices. As a result, no items have covariance of more than 15. As such unidimensionality has been achieved.

Secondly, for construct validity, as shown in Table 2, the values of fitness indices of the listed categories have been achieved. Thus, construct validity for both Emotional Intelligence and Spiritual Intelligence have been established.

Thirdly, for composite reliability and convergent validity, the values of Average Variance Extracted (AVE) and the Composite Reliability (CR) needed to be considered. For Emotional Intelligence, the Average Variance Extracted (AVE) was found to be 0.3 and the CR value was 0.7. Even though the AVE value was slightly low, it is still acceptable, since the composite reliability value is above the required level of 0.6 (Fornell & Larcker, 1981). As for Spiritual Intelligence, the Average Variance Extracted (AVE) was found to be 0.42 and the CR value was 0.77. Again, even though the AVE value is slightly low, it is still acceptable, since the composite reliability value is above the required level of 0.6 (Fornell & Larcker, 1981).

On the other hand, the discriminant validity discriminant value of the construct Spiritual Intelligence in relation to Emotional Intelligence was found to be 0.65. This value was more than their correlation coefficient of 0.62. Thus, discriminant validity was established.

After considering the values of fitness indices, composite reliability, convergent and discriminant validity of both Emotional Intelligence and Spiritual Intelligence, it can be concluded that both constructs have achieved construct reliability and validity required.

Second Order Confirmatory Factor Analysis for the Construct Holistic Individual Characteristics

In order to determine whether the constructs Emotional Intelligence and Spiritual Intelligence are component factors or sub-constructs of the construct Holistic Individual Characteristics, a second order CFA needed to be done and the fitness indices level achieved (Awang & Siew Hui, 2018).

Similar to the model fitness indices used in assessing the measurement models, the model fitness indices used in this analysis were also CMIN/DF which is from the Parsimonious Fit category, GFI and RMSEA from the Absolute Fit category, CFI and TLI from the Incremental Fit category; and need to fulfil the values of CMIN/DF < 5.0, GFI > 0.90, CFI > 0.90, TLI > 0.90 and RMSEA < 0.08 (Awang, 2015). The second order CFA Amos model for Holistic Individual Characteristics is shown in Figure 1.

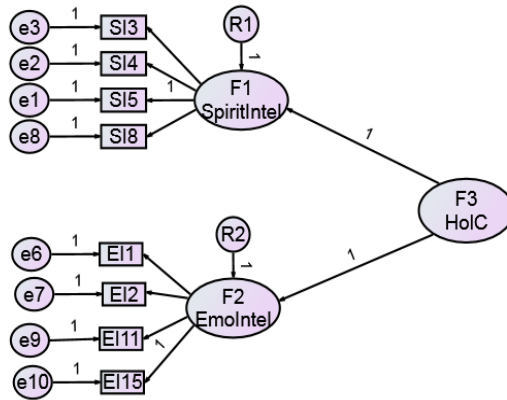


Figure 1. Second order CFA for holistic individual characteristics

Table 3
The Fitness Indices of Holistic Individual Characteristics

Name of Category	Name of Index	Index Value	Comments
Absolute Fit	RMSEA	.041	Required level achieved
	GFI	.982	Required level achieved
Incremental Fit	CFI	.980	Required level achieved
	TLI	.970	Required level achieved
Parsimonious Fit	CMIN/DF	1.645	Required level achieved

p=0.037

From Table 3, it can be seen that the values of the indices RMSEA and GFI from the Absolute Fit category were .041 and .982 respectively; the values of CFI and TLI from the Incremental Fit category were .980 and .970 respectively; and the value of CMIN/DF from the Parsimonious Fit category was 1.645. Thus, the required level of all indices has been achieved. This shows that Emotional Intelligence and Spiritual Intelligence are component factors or sub-constructs of the Holistic Individual Characteristics.

Testing the Hypotheses

There are two hypotheses for this study. To test hypothesis H₁, Pearson one-tailed correlation was used while the SEM Methodology and IBM Amos Version 27 as the tool was used for hypothesis H₂. Both the statistical significance (p < .05) and practical importance (standardised β > 0.2) were considered.

1. Hypothesis H₁: There is a significant correlation between Emotional Intelligence and Spiritual Intelligence among Malaysian Adolescents.

Bivariate analysis was conducted using Pearson one-tailed correlation r-coefficient to determine the correlation between Emotional Intelligence and Spiritual Intelligence. The results showed that correlation coefficient between Emotional Intelligence Scale and Spiritual Intelligence Scale was 0.66 (p=0.01).

From the results, it could be seen that there was a significant correlation between Emotional Intelligence and Spiritual Intelligence. The value of correlation coefficient was 0.66 (p=0.001). Thus, hypothesis H₁ is accepted.

2. Hypothesis H₂: Emotional Intelligence and Spiritual Intelligence are important factors of Holistic Individual Characteristics among Malaysian adolescents.

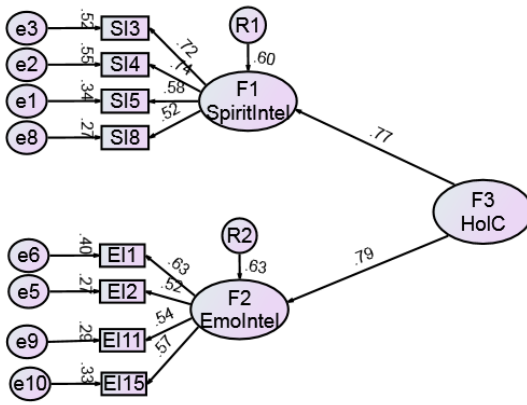


Figure 2. Analysis of second order CFA of holistic individual characteristics

Firstly, from the Amos model of second order CFA analysis for Holistic Individual Characteristics, as shown in as shown in Figure 2 and the related fitness indices shown in Table 3, it could be seen that the fitness indices of Second order CFA for Holistic Individual Characteristics were RMSEA=0.041, GFI=0.982, CFI=0.980, TLI= 0.970, and CMIN/DF= 1.645. Thus, the required level of all indices has been achieved. This shows that Emotional Intelligence and Spiritual Intelligence are component factors or sub-constructs or factors of the Holistic Individual Characteristics.

Table 1.4.

Standardised Regression weights of Holistic Individual Characteristics on Component factors

Constructs			β Value	Importance
Emotional Intelligence	←--	Holistic Individual Characteristics	0.79	Important
Spiritual Intelligence	←--	Holistic Individual Characteristics	0.77	Important

Secondly, the Second Order CFA for Holistic Individual Characteristics as shown in Amos model in Figure 2 also showed regression weights for both Emotional Intelligence and Spiritual Intelligence, as tabulated in Table 4.

From Table 4, it could be seen that the size of β value of Emotional Intelligence was $\beta = 0.794$ and that of Spiritual Intelligence was $\beta=0.774$. Both values were >0.2 . Thus, it can be concluded that both Emotional Intelligence and Spiritual Intelligence are important component factors of Holistic Individual Characteristics. Besides that, the value of R^2 of Emotional Intelligence was 0.631 whereas that of Spiritual Intelligence was 0.597.

Thus, based on these two results, Hypothesis₂ is accepted.

Discussion

The findings of this study added to the existing theoretical explanation and related literature on adolescents becoming holistic individuals. Firstly, this study has significance in terms of methodology which was the Simultaneous Equation Modelling (SEM). Studies which used such approach are still rather scarce in the area of adolescents' development in Malaysia and thus, the findings of this study helped to fill in this gap. By SEM method it is possible to simultaneously analyse both Emotional Intelligence and Spiritual Intelligence constructs, as the contributing component factors of Holistic Individual Characteristics and also the stronger factor could be ascertained.

Subsequently, the findings of this study help to confirm the importance of psychosocial construct of Emotional Intelligence and Spiritual Intelligence by providing empirical evidence that both were all significant factors or components of Holistic Individual Characteristics. These results are in line with Gardner's Multiple Intelligence Theory, Goleman's Emotional Intelligence Theory and Emmon's Spiritual Intelligence Theory. Besides that, it could be seen that between the two component factors, Emotional Intelligence ($\beta = 0.794$) was more important than Spiritual Intelligence ($\beta=0.774$).

As has been discussed in the Introduction section, Malaysia explicitly states that the young generation must be developed to be holistic individuals. Thus, the findings of this study have practical implications too. They provide empirical evidence for all relevant authorities, bodies, schools and parents to consider the importance of Emotional Intelligence and Spiritual Intelligence in developing holistic individuals among the adolescents. Both intelligences can be developed and enhanced through programmes and activities.

Another contribution of this study is that the proposed model of this study fitted the data collected and thus, the model is accepted. This means that the model can be used to analyse other groups of Malaysian adolescent samples.

Conclusion

This study sought to identify and confirm whether Emotional Intelligence and Spiritual Intelligence are significant component factors of Holistic Individual Characteristics among Malaysian Adolescents. From the results, it was confirmed

that this is true and that Emotional Intelligence is the stronger compared to Spiritual Intelligence.

These results also contribute significantly in the gap of knowledge on Environment Connectedness among Malaysian adolescents. Perhaps future studies can be undertaken to confirm other significant component constructs of Holistic Individual Characteristics such as social intelligence or intellectual intelligence, and identify their relative strengths of influence.

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