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PARTIAL LEAST SQUARES MODELLING OF FACTORS INFLUENCING EMPATHY AMONG MALAYSIAN SECONDARY SCHOOL STUDENTS

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ABSTRACT

Purpose – The importance of the affective domain in holistic human development, in particular empathy, is an increasing concern today especially after the Covid-19 pandemic. The purpose of this study was threefold: (i) to investigate the attitudes of school students toward competencies associated with human consciousness; (ii) to validate the psychometric properties of the model of Malaysian school students' empathy, and (iii) to examine the influence of school students' self-efficacy, emotion regulation, sense of belonging and problem-solving on their empathy.

Methodology – Using a quantitative survey approach, data were collected from 911 students drawn from 10 schools throughout Malaysia using a four-point Likert scale instrument. The study employed variance-based SEM by using Smart-PLS to achieve the objectives. First, the measurement model was employed to test the psychometric properties (such as convergent validity, divergent validity, and reliability) for all constructs. Second, the structural model was conducted to test the direct and indirect hypothesized relationship.

Results – The measurement model provided evidence for the convergent and discriminant validity of the study constructs. The hypothesized structural model exhibited that three out of the four constructs, i.e., emotion regulation, sense of belonging and problem-solving have a direct influence on Malaysian school students' empathy. Furthermore, emotion regulation showed a mediating role in the relationship between the exogenous variables (sense of belonging and problem-solving) and students' empathy. The model explained 58.6 percent of the variance in the Malaysian school students' empathy**.**

Significance – This study is a pioneering work in Malaysia. With the identification of the factors that influence Malaysian school students' empathy, i.e., students' emotion regulation, sense of belonging and problem-solving, more effective support and interventions can be provided by teachers and the Ministry of Education to help in enhancing school students' empathy.

Keywords: Competencies, empathy, emotion regulation, problem-solving, self-efficacy, sense of belonging, states of consciousness.

INTRODUCTION

In many countries today, education is heavily focused on cognitive development or the human brain if the nature and form of assessment can be used as a criterion for making this judgement. Examinations has always played the utilitarian role of a sorting machine, sorting people for different specializations or jobs and ensuring that they become civic-minded citizens. Man is made up of the soul, the body, and the mind. An integrated and holistic education should address these three dimensions which are also known in psychology as the

cognitive, physical, and affective domains. In some cases, it is also known as the 3H education, namely, the head (rational), the heart (feelings) and the hands (action). From the Islamic perspective, the soul (heart) refers to the *rūḥ*, *nafs* and *qalb*, while the mind (head) refers to the intellect or *ʾaql*, *lubb* or *fuād*, and the body (hands) refers to *jasad*. In fact, a holistic and integrated education was highly emphasized in early Islamic civilization before the establishment of formal madrasah which produced many scientific advancements in medicine, astronomy, mathematics, and physics (Nasr, 1968).

However, due to an imbalanced education for utilitarian purposes and industrialization that over emphasized the cognitive domain, the affective domain and humanitarian values have been neglected. The invention of the internet and other information and communication technologies have led to globalization, internationalization, and neoliberalism turning education into a commodity. In other words, education has been diverted from its fundamental aims of enlightenment and social service to become an economic enterprise to the extent that Lewis (2006), a professor and dean from Harvard University wrote a critique on how the great university bears excellence but without a soul.

In response to this challenge, Malaysia began to reform its education in the 1980s beginning with the Cabinet Committee Report (1979), followed by the formulation of the National Education Philosophy (NEP) in 1987 and subsequently the implementation of the Integrated Curriculum for primary and secondary schools in 1983 and 1988, respectively. The NEP desires to produce Malaysian citizens who are knowledgeable, morally excellent, and competent and who can contribute to their personal well-being, family, society, and country through a balanced and integrated education in terms of physical, emotional, spiritual, and intellectual development based on faith in God. This philosophy implies that education in Malaysia is knowledge-based, value-based and faith-based. The Integrated Curriculum for Secondary School (ICSS, popularly known as KBSM) was a mechanism to realize the NEP and one of its principles is 'values across the curriculum' where teachers are encouraged to instill these sixteen noble values: compassion/empathy, self-reliance, humility/modesty, respect, love, justice, freedom, courage, cleanliness of body and mind, honesty/integrity, diligence, cooperation, moderation, gratitude, rationality, and public-spiritedness. The KBSM contains several other

principles which are lifelong education and the promotion of the national language. Hence, the curriculum and policies of the Malaysian national education supported education for the development of the affective aspect of the human being a decade ago before UNESCO came up with its four pillars of learning: *learning to know, learning to do, learning to live together, and learning to be* (Delors, 1996). Even though this study focuses on the *learning to be* pillar, it has implications for all the other pillars as well. Schleicher's (2019, p. 3) idea that "the future is about pairing the artificial intelligence of computers with the cognitive, social and emotional skills and values of humans" provides a rationale for this study.

Statement of the Problem and Purpose

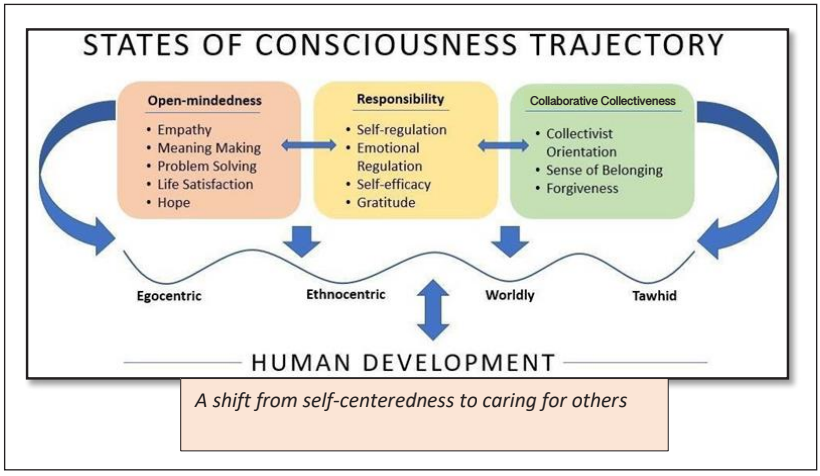
The twenty-first century with its information and communication technologies ushered in the era of globalization and IR 4.0 with its accompanying internationalization, dominance of the English language, k-economy, and university rankings among others. With the k-economy and neo-liberalism, education has become increasingly utilitarian as mentioned. Character, values, and wisdom education have been marginalized and education has become more of schooling for a vocation rather than the holistic development of the person. A great paradigm shift has occurred in education with an emphasis on education as a process rather than a product, leading to the necessity of the following competencies: critical and creative thinking skills, creativity, innovativeness, problem-solving, communication, collaborative and inter-personal skills, and inquiry and learner-centered learning. Another, is the emphasis on human development and consciousness in living harmoniously with others, and for the sustainable development of our planet, Earth. In this respect, empathy is one of the most important values or competencies which is an essential prerequisite for human connections.

The present study is based on the Spiral Progression Approach (Nasser et al., 2019) which is adapted from the Spiral Dynamic Model (Beck & Cowan, 2006). The different stages of this Spiral Progression Approach were based on the works of Piaget and Inhelder (1969), Erikson (1993), Kohlberg (1984), and Crain (1992). The Tawhid dimension was taken based on the idea of Al-Faruqi (2000). Tawhid is a worldview that provides the basis for Islamic civilization and the foundation for all other principles of Islam.

The Spiral Progression model identified three states of consciousness – egocentricism, ethnocentricism and the worldly, corresponding to three sets of values or competencies, namely open-mindedness, responsibility, and collaborative-collectiveness. Twelve competencies were identified from the three sets; five under open-mindedness, four under responsibility and three under collaborative collectiveness as shown in Figure 1. The selection of these three was deemed appropriate for the context under examination in this study because it is a more meaningful paradigm for human development among Muslim-majority societies that have some unique as well as universal aspects. It represents a shift from the egocentric (focus on self) to the ethnocentric (focus on social groups) to the worldly (focus on all) and Tawhid (focus on the Unity of Creation).

Figure 1

Hypothesized Spiral Progression (SP) Approach (Source: AEMS-IIIT 2020, p. 12



The first category of competencies, open-mindedness is the adaptability and ability to think critically, by looking into all possible dimensions of a problem or an issue within a context. It also promotes wisdom and knowledge making (Proyer et al., 2011). The following values correspond to this category: empathy, problem-solving, meaning making, life satisfaction, and hope. Empathy is an important value and skill that has positive associations with social and communication skills along with moral judgment (Ahmetoglu & Acar, 2016).

Research findings show that there is a positive association between meaning making and positive outcomes such as positive affect and self-efficacy (DeWitz et al., 2009). Social problem-solving helps individuals manage their emotions through successful adaptation of coping strategies. It also helps in maintaining positive inter-personal relationships through conflict management and resolution. Studies show that open-mindedness contributes to life satisfaction (Proyer et al., 2011), and psychological and relational factors such as perceived social support (Diener, 2000), family support (Edwards & Lopez, 2006), hope (O'Sullivan, 2011), and sense of belonging (Mellor et al., 2008) are positively associated with life satisfaction. Hope is an essential element which contributes to mental health (Krafft et al., 2017).

The second category, responsibility is considered one among the needed skills but not necessarily all the ones needed to act in a socially responsible manner. Bandura (1989, 2001) posited that human beings are not passive creatures controlled by their environment; rather, they have agency and the capability to pro-actively manage and control their functions and actions. Self-regulation, emotion regulation, self-efficacy, and gratitude fall under this state. Self-regulation is a process that enables individuals to proactively manage their circumstances and environment and personally activate and control their cognition, emotions, and behavior in order to successfully complete certain tasks and achieve their own goals (Zimmerman & Schunk, 2008). Emotion regulation refers to one's ability to effectively manage and respond to an emotional experience, and it is found to be an essential contributor of health and well-being (Tamir, 2009). Self-efficacy is defined by Bandura (1986, 1997) as a person's belief in his or her ability to organize and execute certain behaviors that are necessary to become successful in each task. Gratitude is a positive emotion and an important human virtue. "It is positively related to many of the similar emotions found in adult research, such as hope, forgiveness, pride, contentment, optimism, inspiration, and global positive affect" (Wood et al., 2010, p. 895).

Collaborative-collectiveness is the sense of taking the collective to a collaborative state and this includes the values of: sense of belonging, forgiveness, religiosity or spirituality and collectivistic individualistic orientation. In an academic setting, sense of belonging is defined as

students' perception of being supported, accepted, respected, and included in the institution (Goodenow, 1993). In educational settings, sense of belonging is found to be a strong predictor of students' positive affect, academic and life satisfaction, self-efficacy, and self-regulation (Saroughi & Kitsantas, 2020). Studies have found forgiveness to be aligned with psychological health and linked to values such as empathy, gratitude, and life satisfaction. The participants of these correlational studies suggested that people with higher empathy and gratitude are more forgiving (Marigoudar & Kamble, 2014). Religion fulfills the human need for security among the basic needs and is the foundation for self-actualization (Maslow, 1943, 1954). The literature suggests a close relationship between healthy emotional functioning and religion.

Individualism is defined as a situation in which people are only concerned with themselves and close family members, while collectivism is defined as a situation in which people feel they belong to larger in-groups (Darwish & Huber, 2003). People from individualistic cultures have an independent view of themselves without connecting themselves with others. Meanwhile, those from collectivistic cultures are more likely to be independent, but connected to others, and self-defined in terms of their relationships with others.

There are not many studies on these three categories of competencies—open-mindedness, responsibility, and collaborative-collectiveness in the Malaysian context. There were several studies (Mantrak 1993; Department of Education IIUM 1996) focused on the methods of inculcation of the sixteen listed universal moral values in the KBSM which teachers took seriously and planned for in their daily lessons, and its effectiveness. Recent researches in Malaysia examined social integration in university campuses (Ramlee et al., 2006), civic and citizenship education (Hussien et al., 2017; Hussein et al., 2020); and the hikmah (wisdom) pedagogy of philosophical inquiry that develops the three categories of competencies in critical and creative thinking skills, ethical reasoning, empathy, community mindedness, open-mindedness, and collaborative and communication skills (Hashim et al., 2014; Wan Yusoff et al., 2018). Researches on wisdom pedagogy have provided evidence for the successful development of these competencies but there are no studies on the relationship between them.

In a more recent related research the AEMS-Malaysia study (Hashim et al., 2019) examined six values or constructs: moral reasoning, self-efficacy, empathy, sense of belonging, community- mindedness and forgiveness. The study employed a quantitative survey method with a sample consisting of 1174 school students. The findings revealed significant correlation between the six constructs and provided adequate evidence that the model with forgiveness as the dependent variable and the other factors as independent and predictor variables, was valid and can be further improved. Empathy was found to be a key predictor of forgiveness and community-mindedness. This means that the more empathetic one is, then the more forgiving and community-minded one will be. The results were consistent with AEMS worldwide study (Nasser et al., 2019) across many Muslim countries. However, empathy was not studied as an outcome variable as in the present study.

There are not many studies on the four competencies—self-efficacy, sense of belonging, problem-solving and self-regulation, its relationships and how these competencies influence empathy. In their review of literature, Eisenberg and Miller (1987) found that higher levels of empathy in children were associated with more cooperative and socially competent behavior. Other researchers (Sallquist et al. 2009; Zhou et al. 2002) have also found that children with higher empathy for positive and negative emotions are more socially competent. In addition to being associated with helping and moral behavior towards others, their review revealed that the ability to empathize is also associated with social skills which is the ability to function optimally with others. McDonald and Messinger (2011) summarized that the ability to empathize is important for promoting positive behavior towards others and facilitating social interactions and relationships. Empathy is involved in the internalization of rules that can play a part in protecting others, and, more importantly, it may be the mechanism that motivates the desire to help others, even at a cost to oneself. Furthermore, empathy plays an important role in becoming a socially competent person with meaningful social relationships.

Since the Covid-19 pandemic in 2020, concerns on humanizing education have increased to a great extent. Yet there are scarce studies in Malaysia on the constructs or values investigated in this study. Although school-based assessment efforts have been initiated to

reduce examination pressure and to incorporate the affective domain, parents still focus on academic achievement and put pressure on teachers. In this study the following constructs were selected from the three categories of competencies, namely empathy and problem-solving for open-mindedness, emotion regulation and self-efficacy for responsibility, and sense of belonging for collaborative-collectiveness.

Thus, the goal of this study is to examine school students' attitude towards the five competencies of self-efficacy, emotion regulation, social problem-solving, sense of belonging and empathy; and to examine the influence of the first four constructs on empathy. Specifically, this study attempts to: (i) investigate the attitude of school students towards the five competencies; (ii) validate the psychometric properties of the model of Malaysian school students' empathy, and (iii) examine the influence of school students' self-efficacy, emotion regulation, sense of belonging, and problem-solving on their empathy.

RESEARCH METHODOLOGY

Instrument

The current study employed a quantitative research approach that utilized a cross-sectional research design. The instrument was a questionnaire with 40 items consisting of five scales or constructs and six items on demography. The scales were self-efficacy (SE), problem-solving (PS), sense of belonging (SB), emotion regulation (ER), and empathy (E). The items in the instrument employed a four-point Likert scale with varying attributes; agreement, frequency, importance, and degree of truth. The respondents were requested to rate the statements most representative of their feelings and opinion. The Cronbach's alpha value for the reliability of the whole instrument was 0.949. Based on the rule of 0.6–0.7 as acceptable, 0.8–0.95 as very good (Nunnally & Bernstein, 1994), the reliability of the instrument was considered as very good. The Cronbach's alpha for all scales ranged from 0.7 to 0.9. Thus, the validity and reliability of the instrument was acceptable for all scales.

Participants

Cluster sampling was applied to 10 selected secondary schools throughout Peninsular Malaysia; two schools from Johor representing

the south zone, three from Terengganu representing the east zone, two from Negeri Sembilan representing the central zone, and three from Kedah representing the north zone. The selection of the 10 secondary schools throughout Malaysia was based on zones (north, south, central, and east), school type (national, national-type, residential, Islamic religious and missionary), and school location (rural and urban). Due to the pandemic, it was not possible to collect data from East Malaysia as planned.

The target population for this study was secondary school students because it was felt that they were more matured than primary students and would be able to express their views better. As this study was aimed at the general population of students, non-probability sampling technique was applied (Hui, 2017). The sample unit of classes for each school was selected using the convenience sampling method by the school principal. The data collection was arranged in such a way that all the students were gathered in a large hall and they answered the questionnaires during the same period. One of the prominent methods in sample size determination is the Raosoft calculation. The present study decided to adopt a margin error of 5 percent with a 97 percent confidence level. Therefore, based on the target population size, the minimum sample size was estimated at 1066 respondents. Out of the 1066 distributed questionnaires, 911 from the 10 secondary schools were returned. The sample consisted of 474 (52%) female students and 436 (47.9%) male students. They were selected from five national secondary schools (SMK, n=481), one national religious secondary school (SMKA, n=92), one national type Chinese secondary school (SMJKC, n=89), one fully residential national secondary school (SBP, n=72), and two missionary type national secondary schools (SMKM, n=177). The students' ethnicity, religious affiliation and grade levels are shown in Table 1. The selection of schools was conducted with the permission and assistance of the School Division and the Educational Planning and Research Division (EPRD) of the Ministry of Education including the State Education Department. In conformity with research ethics, each student's identity was kept confidential with no names taken in the register nor written on the questionnaire. Only the school code was given for record and research management purposes. By ethnicity, a majority of the sample were Malay students at 69.6 percent, the Chinese comprised 22.4 percent and the Indians, 7.2 percent which reflected the composition of the population in Malaysia. The sample comprised 69.7 percent Muslims, 20.3 percent Buddhists,

6.4 percent Hindus, 2.1 percent Christians and 1.4 percent from others. The sample consisted of secondary school students from: form three (7.6%), form four (25.4%), form five (66.1%) and form six (0.3%).

Table 1

Students' Ethnicity, Religious Affiliation and Grade Level

Sex	Number	Percent
Gender		
Female	474	52.0
Male	436	47.9
Missing	1	.1
Total	911	100.0
School		
SMK	4	481
SMKA	1	92
SMJKC	1	89
SBP	1	72
SMKM	2	177
Total	9	911
Ethnicity		
Malay	634	69.6
Chinese	204	22.4
Indian	66	7.2
Other	6	.7
Missing	1	.1
Total	911	100.0
Religion		
Muslim	635	69.7
Christian	19	2.1
Buddhist	185	20.3
Hindu	58	6.4
Atheist	1	.1
Agnostic	1	.1
Nothing	5	.5
Other	3	.3
Missing	4	.4
Total	911	100.0

(continued)

Sex	Number	Percent
Grade/Form		
Grade 9/ Form 3	69	7.6
Grade 10/ Form 4	231	25.4
Grade 11/ Form 5	602	66.1
Grade 12/ Form 6	3	.3
Other	1	.1
Missing	5	.5
Total	911	100.0

Data Analysis

In order to ensure the validity and reliability of the current conceptual framework and to test its hypothesized relationships, the researchers employed two statistical tools, namely, descriptive statistics by using SPSS version (26) and partial least squares (PLS) which is also known as variance-based SEM via SmartPLS 3.0 software (Ringle et al., 2015). As recommended by Hair et al. (2017), the PLS-SEM modeling process included two main steps. First, assessment of the measurement model which was to investigate the psychometric properties of the hypothesized model. After conducting the measurement model and ensuring its psychometric properties, it was followed by an evaluation of the structural model in order to test the hypothesized relationships (Hair et al., 2017; Ramayah et al., 2011).

RESULTS

Descriptive Statistics of Study Variables

The items in the instrument employed the four-point Likert scale. For example, if the attribute is agreement, then the four-point Likert scale ranged from: 1=strongly disagree, 2=disagree, 3= agree, to 4= strongly agree. For importance, the four-point Likert scale ranged from: 1=not very important, 2=not important, 3=important, to 4= very important. Hence the midpoint of the item means indicated (1+2+3+4)/4 = 2.50. From Table 2 it is evident that all the scales showed means greater than 2.50. Analysis of the descriptive statistics provided the order of the scales in descending average means as follows: empathy (3.18), emotion regulation (3.14), self-efficacy (3.02), problem-solving (2.96) and sense of belonging (2.88). It can be inferred from the results that

the students have harmonized with empathy and emotion regulation. They often engaged in problem-solving and often exhibited self-efficacy. They found the statements on sense of belonging to be true.

Table 2

Descriptive Statistics of Variables

Construct (Attribute)	Item	Questionnaire statement	Mean	Std	Construct mean
Empathy (Agree)	Empathy Criticizing	Before criticizing somebody, I try to imagine how I would feel if I were in their place.	3.16	.831	3.18
	Empathy_ Perspective	I sometimes try to understand my friends better by imagining how things look from their perspective.	3.36	.812	
	Empathy_Sides	I try to look at everybody's side of a disagreement before I decide.	3.16	.814	
	Empathy_ TwoSides	I believe there are two sides to every question and try to look at both.	3.19	.818	
	Empathy_Upset	When I'm upset at someone, I usually try to put myself in his/ her place for a while.	3.03	.854	
Problem-solving (Freq)	PS_CompareIdeas	I compare ideas when thinking about a topic.	3.04	.928	
	PS_GatherInfo	I develop my ideas by gathering information.	2.91	.849	
	PS_ IdentifyOptions	When faced with a problem, I identify options.	2.93	.822	
	PS_InfoToSupport	It is important for me to get information to support my opinion.	3.06	.885	
	PS_MindOpen	I keep my mind open to different ideas when planning to decide.	3.06	.995	

(continued)

Construct (Attribute)	Item	Questionnaire statement	Mean	Std	Construct mean
Sense of Belonging (Agree)	PS_MoreThanOne	I usually have more than one source of information before deciding.	2.84	1.006	2.88
	PS_PlanInfo	I plan how to get information on a topic.	2.83	.915	
	PS_SupportDecisions	I support my decisions using information that I have obtained.	3.00	.895	
	SB_Activities	I am included in lots of activities at my school.	2.79	.952	
	SB_GoodWork	People here know I can do good work.	2.96	.849	
	SB_OpinionsSeriously	Other students take my opinion seriously.	2.57	.840	
	SB_PeopleFriendly	People at this school are friendly towards me.	3.11	.875	
	SB_TeachersInterested	Teachers here are not interested in people like me*	2.87	.876	
	SB_TreatedRespect	I am treated with as much respect as others at my school.	2.99	.773	
Self-efficacy (Freq)	SE_KeepTrying	If I can't do a job the first time. I keep trying until I can.	3.11	.887	3.02
	SE_RightToWork	When I decide to do something, I go right to work on it.	2.75	.779	
	SE_TryHarder	Failure just makes me try harder.	3.18	.846	
Emotion-Regulation (Agree)	ER_EmotionControl	I control my emotions by changing the way I think about a situation I am in.	3.25	.868	3.14
	ER_ExpressPositive	When I am feeling positive emotions, I express them.	3.24	.899	
	ER_LessNegative	When I want to feel less negative emotion, I change my thinking about a situation.	2.89	.882	
	ER_NegativeThink	When I want to feel less negative emotion, I change the way I think about a situation.	3.02	.929	
	ER_PositiveChange	When I want to feel more positive emotion, I change my thinking.	3.20	.969	
	ER_StressCalm	When I am in a stressful situation, I think in a way that helps me to stay calm.	3.25	.834	

Assessment of the Measurement Model

Prior to testing the hypothesized model, the psychometric properties of the current model were assessed using the measurement model. The measurement model of the current study consisted of five (5) constructs, namely, students' empathy, problem-solving, self-efficacy, emotion-regulation, and sense of belonging (Figure 2).

According to Hair et al. (2017) the convergent construct validity can be accessed by examining the factor loadings for each variable and average variance extracted (AVE) for each latent construct which should be > 0.60, and > 0.5, respectively. In terms of construct reliability, it can be assessed by checking the composite reliability (CR) which should be > 0.7. In the current study, as shown in Table 3, the AVE values for all the constructs were greater than 0.5 and the composite reliability values for all constructs were greater than 0.7. Hence, after deleting all the problematic items, all loadings retained in the model were above the cut-off value (0.60). The AVE and CR values were within the recommended values > 0.50 and > 0.70, respectively. Therefore, it can be concluded that the measurement model for the current study did not have issues regarding its convergent validity and reliability.

Figure 2

Measurement Model

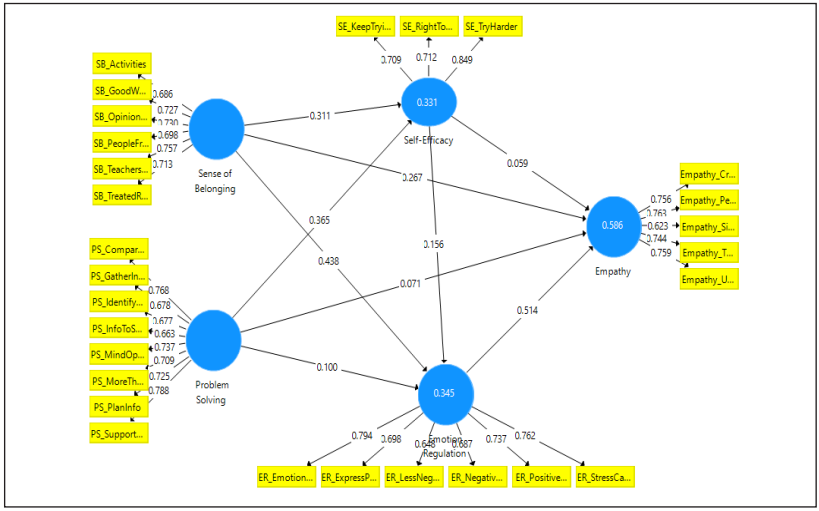


Table 3

Results of Measurement Model

Construct	Item	Loading	CR	AVE
Empathy	Empathy_Criticizing	0.756	0.851	0.534
	Empathy_Perspective	0.763		
	Empathy_Sides	0.623		
	Empathy_TwoSides	0.744		
	Empathy_Upset	0.759		
Problem-solving	PS_CompareIdeas	0.768	0.895	0.518
	PS_GatherInfo	0.678		
	PS_IdentifyOptions	0.677		
	PS_InfoToSupport	0.663		
	PS_MindOpen	0.737		
	PS_MoreThanOne	0.709		
	PS_PlanInfo	0.725		
	PS_SupportDecisions	0.788		
Sense of belonging	SB_Activities	0.686	0.865	0.517
	SB_GoodWork	0.727		
	SB_OpinionsSeriously	0.73		
	SB_PeopleFriendly	0.698		
	SB_TeachersInterested	0.757		
	SB_TreatedRespect	0.713		
Self-efficacy	SE_KeepTrying	0.709	0.802	0.576
	SE_RightToWork	0.712		
	SE_TryHarder	0.849		
Emotion-regulation	ER_EmotionControl	0.794	0.867	0.522
	ER_ExpressPositive	0.698		
	ER_LessNegative	0.648		
	ER_NegativeThink	0.687		
	ER_PositiveChange	0.737		
	ER_StressCalm	0.762		

Furthermore, as suggested by Fornell and Larcker (1981), as a requirement for the assessment of the measurement model, the divergent validity was assessed by checking the AVE. To ensure divergent validity, the average variance extracted, should be bigger than the squared correlations. The other way of assessing the divergent validity of the measurement model was by comparing the square root of the AVE with the correlations. In the current study, as can be seen in Table 4, the square roots of the AVE (in bold) were all more than the off-diagonal correlation values, suggesting that there was sufficient discriminant validity. Hence, it can be concluded that the discriminant validity of the current model was ensured as the criteria were met. To conclude, the findings showed a valid and reliable measurement model which allowed the researchers to proceed with the second step of PLS-SEM, i.e., testing the hypothesized model.

Table 4

Discriminant Validity of Measurement Model

Construct	1	2	3	4	5
Emotion regulation	**0.723**				
Empathy	0.714	**0.731**			
Problem-solving	0.371	0.409	**0.719**		
Self-efficacy	0.413	0.434	0.502	**0.759**	
Sense of belonging	0.556	0.612	0.439	0.472	**0.719**

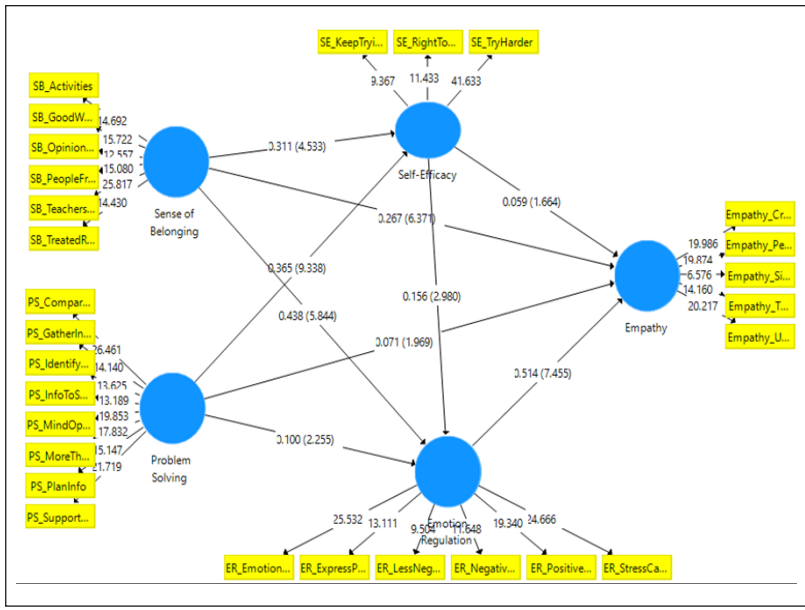
Note: Presented in bold are the square values for each variable's AVE and below the diagonal of the table shows the values of the shared variance.

Structural Model

The next step in conducting the variance-based SEM analysis was to assess the structural hypothesized model (inner model) so that one could examine the study's hypothesized relationships. As such, after warranting the psychometric properties in terms of the model's construct reliability and validity, the researchers proceeded with the next step using Smart- PLS version 3 to investigate the hypotheses. Hence, a bootstrapping procedure with a resample of 1000 was utilized as recommended by Hair et al. (2017).

Figure 3

The Structural Model



Hypothesis Testing

The structural model assessment as shown in Table 5 provides the results of the hypothesis tests. Both T-values and p-values were considered to determine the effect of one variable (A) on another variable (B) as indicated by A à B. First, regarding the factors directly influencing student' self-efficacy, both hypotheses H1 and H2 were found to be statistically significant at the level $p < 0.05$. H1 is the relationship between students' problem-solving and self-efficacy ($\beta=0.365$, $t > 1.96$, $p <0.05$) while H2 is the relationship between their sense of belonging and self-efficacy ($\beta=0.311$, $t > 1.96$, $p <0.05$). Second, with respect to the factors that directly influenced students' emotion regulation, all the three hypotheses H3, H4 and H5 were statistically significant. H3 is the relationship between students' sense of belonging and emotion regulation ($\beta=0.438$, $t > 1.96$, $p <0.05$), H4 is the relationship between students' problem-solving and emotion regulation ($\beta=0.100$, $t > 1.96$, $p <0.05$) and H5 is the relationship between students' self-efficacy and emotion regulation ($\beta=0.156$, $t >$

1.96, p <0.05). Third, regarding the factors that directly influenced students' empathy, three of the four hypotheses, H6, H7, H8 and H9, turned out to be statistically significant at p < 0.05. These indicated the relationships: of H6 between students' sense of belonging and empathy (β=0.267, t > 1.96, p <0.05), of H9 between students' emotion-regulation and empathy (β=0.514, t > 1.96, p <0.05) and of H7 between students' problem-solving and empathy (β=0.071, t > 1.96, p <0.05). However, for H8, students' self-efficacy did not support their empathy.

Table 5

Direct Hypotheses of the Study

	Hypothesis	Beta (β)	S. E	T-value	P-value	Decision
H1	Problem-solving → Self-efficacy	0.365	0.039	9.338	0.000	Supported
H2	Belonging → Self-efficacy	0.311	0.069	4.533	0.000	Supported
H3	Belonging → Emotion regulation	0.438	0.075	5.844	0.000	Supported
H4	Problem-solving → Emotion regulation	0.1	0.044	2.255	0.025	Supported
H5	Self-efficacy → Emotion regulation	0.156	0.052	2.98	0.003	Supported
H6	Belonging → Empathy	0.267	0.042	6.371	0.000	Supported
H7	Problem-solving → Empathy	0.071	0.036	1.969	0.050	Supported
H8	Self-efficacy → Empathy	0.059	0.036	1.664	0.097	Not supported
H9	Emotion regulation → Empathy	0.514	0.069	7.455	0.000	Supported

Coefficient of Determination and Effect Size

Table 6 reveals that the results of the coefficient of determination (R^2) for the secondary school students' empathy was 0.586, their emotion regulation was 0.345 and their self-efficacy was 0.331. As suggested by Cohen (1988), it was noted that only students' empathy had a large coefficient of determination as the value was bigger than the cut-off points (>.35). Moreover, the effect's size (F^2) analysis was employed

for several exogenous constructs on the endogenous variable, i.e., secondary school students' empathy. The main purpose of the effect size was to measure the changes in the proportion of the variation in the dependent variable (R^2) in an attempt to find out whether each specific exogenous variable and endogenous variable has a practical effect (Cohen, 1988). Hence, the effect size by means of F^2 can be evaluated by each effect through the path model (Cohen, 1988). In this regard, as suggested by Cohen (1988), F^2 can be considered big when it is bigger than 0.35, medium when it is bigger than 0.15 and can be considered small when it is 0.03. Table 6 indicates that the F^2 was large only for H9, medium for hypotheses H1, and H3, while the other hypotheses only had small effect size.

Table 6

Coefficient of determination (R^2) *and Effect's size* (F^2)

	Hypotheses	F^2	R^2
H1	Problem-solving → Self-efficacy	0.175	0.331
H2	Belonging → Self-efficacy	0.112	
H3	Belonging → Emotion regulation	0.218	
H4	Problem-solving → emotion regulation	0.015	0.345
H5	Self-efficacy → emotion regulation	0.022	
H6	Belonging → Empathy	0.132	
H7	Problem-solving → Empathy	0.003	0.586
H8	Self-efficacy → Empathy	0.003	
H9	Emotion regulation → Empathy	0.390	

DISCUSSION

Based on the findings of the descriptive statistics, in general, the Malaysian school students had demonstrated a high level of consciousness and competencies. The highest score of competencies based on the four-point Likert scale was students' empathy (M = 3.18), while the lowest was sense of belonging (M = 2.88). The means for the responsibility competencies: emotion regulation (M = 3.14) and self-efficacy (M = 3.02) were also high while the mean for open-mindedness competencies: problem-solving (M = 2.96) was moderate. Taking together empathy and problem-solving, the mean

(M = 3.08) showed that the students had demonstrated a good level of open-mindedness competencies. Thus, based on the findings, it can be concluded that there appeared to be a high level of competencies among school students in Malaysia sampled in the study. It can also be concluded that the National Education Philosophy and the accompanying KBSM have been effective in fostering the sixteen universal values among students and this should be maintained in the future. The high level of consciousness and competencies among school students in Malaysia could be regarded as her future strength.

The second aim of the study was to validate the psychometric properties of the model of Malaysian school students' empathy in terms of reliability, convergent validity, and discriminant validity. The results from the measurement model provided evidence for the existence of a valid and reliable model of Malaysian school students' empathy. The context of Malaysia is very important because it is set against the background of a multicultural, multi-ethnic and multi-religious society whereby tolerance, understanding and empathy are very important for living in harmony. Finally, the present study provides empirical evidence that the model of Malaysian school students' empathy is a multidimensional construct, as implicitly stated in earlier works. In this study, empathy was significantly influenced by students' emotion regulation, sense of belonging, and problem-solving. These factors contributed 58.6 perecnt of the variance of students' empathy. The most influential factor was emotion regulation. Tamir (2009) explained how emotion regulation is essential for health and well-being. The study showed that the least but still moderate influential predictor was problem-solving which helped with maintaining positive inter-personal relationships through conflict management and resolution (Elias & Clabby, 1988). However, the study revealed that students' self-efficacy did not exert a significant impact on the students' empathy, although it was significantly influenced by a sense of belonging and problem-solving. In addition, students' emotion regulation was significantly influenced by their self-efficacy, sense of belonging and problem-solving.

CONCLUSION

Empathy is an essential skill for forming good relationships with others. Empathy has been shown to lower levels of hostility and aggression (Castillo et al., 2013), and results in a positive association with social

and communication skills and moral judgment (Ahmetoglu & Acar, 2016). This study shows that empathy can be improved through better emotion regulation, sense of belonging and problem-solving. This is consistent with the findings by Eisenberg and Miller (1987) that higher levels of empathy are associated with more cooperative and socially competent behaviour. Therefore, schools should provide more programs that encourage inter-personal communication and collaboration, sense of belonging and social problem-solving through civic and citizenship, social studies, moral, Islamic studies, physical education classes, and co-curricular activities. The hikmah (wisdom) pedagogy of philosophical inquiry with its community of inquiry and dialogue have proven its suitability in this (Hussien et al., 2017). For emotion regulation, teachers play a major role of modelling good emotions, emotional skills, and behavior through their interactions with students. Teachers will also become a model for empathizing with others. School students who have successfully formed positive interpersonal relationships and who are able to regulate their emotions can actively manage challenging situations in the future including empathizing with others. These are universal values and are important in inculcating the competencies of open-mindedness, responsibility and collaborative collectiveness which are essential in learning to live together as endorsed by the UNESCO pillars of learning regardless of whether it is for Muslim or non-Muslim societies.

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