Predictive Validity Study of Sustainable Leadership for Learning Questionnaire

Marni Ishak
Corresponding author, School of Education, Universiti Utara Malaysia, Malaysia, *marniishak1521@gmail.com*

Fauzi Hussin
Assoc. Prof. School of Education, Universiti Utara Malaysia, Malaysia, *fauzihussin21@gmail.com*

The ultimate goal of this study is to test the validity of the newly developed Sustainable Leadership for Learning Questionnaire (SLLQ) in terms of predictive validity on teacher satisfaction towards teaching. Apart from that this study also to test the convergent and discriminant validity of SLLQ. To achieve the objective of the study, a cross-sectional survey design was utilized. A total of 190 teachers from national primary schools in Kedah, Malaysia was randomly selected to participate in this study. The Teaching Satisfaction Scale (TSS) were used to measure teachers' satisfaction as criterion variable. Using PLS-SEM analysis, this study found that the Sustainable Leadership for Learning Questionnaire (SLLQ) is a valid questionnaire to predict teachers' satisfaction towards teaching. This study has contributed to the establishment of newly constructed questionnaire namely SLLQ and also to the development of leadership literature in the context of primary school in Malaysia.

Keywords: sustainable leadership for learning questionnaire (SLLQ), teachers' satisfaction towards teaching, primary schools, leadership, leadership

INTRODUCTION

Changes in human lifestyles will still happen even though they are not in favor by many people (Cornescu & Adam, 2016). It is predicted that in the era of industrial revolution 4.0 and beyond, human lifestyles will change significantly (Mao et al., 2019). Therefore, in order to face these changes, Malaysia strives to provide appropriate education to produce highly skilled human resources to make Malaysia a country that grows sustainably with the changing times by 2030 (Malaysia, 2018). Thus, to achieve this goal, the main focus of Malaysian education is to develop high-performing students at early stages (Ministry of Education Malaysia, 2013). To make it a reality, the effectiveness of teachers is significant (Hattie, 2003) and the effectiveness of teachers depends on their level of job satisfaction (Hoy & Miskel, 2008; Ismail & Meran, 2021),

while one of the main factors of teachers' job satisfaction is the leadership of school principals (Bass & Bass, 2008; Bush, 2020; Cansoy, 2019; Chen et al., 2017; Jusoh, 2012; Sabir & Hussin, 2021; Wallace Foundation, 2013).

In general, all leadership theories have an influence on subordinates' job satisfaction levels. However, the issues arise here are: Which leadership styles contribute the most to teachers' job satisfaction? Does the sustainable leadership model for learning also have the same influence on teachers' job satisfaction as other leadership models, especially in the education sector in Malaysia? To answer these questions, a new leadership questionnaire called the Sustainable Leadership for Learning Questionnaire (SLLQ) was constructed by this author based on sustainable leadership and leadership for learning theories. Subsequently, this study was conducted to validate the newly constructed questionnaire based on convergent, discriminant and predictive validity criteria.

Literature Review

Sustainable Leadership

Sustainable leadership for learning is basically a combination of two leadership theories namely sustainable leadership theory and leadership for learning. Sustainable leadership, according to Hargreaves (2007) is an educational leadership that is able to develop, enhance and sustain learning in a harmless way and truly create positive benefits either now or in the future through building a school culture via shared beliefs, values and visions. Further, Hargreaves (2007) established seven principles of sustainable leadership in educational: 1) Protects and promotes lifelong learning and caring for others. 2) Preserves the valuable aspects of life. 3) Teachers are leaders. 4) Promote sharing knowledge and resources. 5) Promotes diversity and avoid standardisation. 6) Develops human resources. 7) Learns from the past for a better future.

Although sustainable leadership is a new theory, studies to test sustainable leadership as predictor to criterion variables, is promising. Iqbal and Ahmad, (2020) revealed that sustainable leadership was significantly affected sustainable performance of the organization. Sezgin-Nartgün et al. (2020) reported that sustainable leadership was significant predictor for school effectiveness and work effort of teachers. Earlier, Hyung-Woo (2017) found that sustainable leadership was a significant predictor to organizational effectiveness

Leadership for Learning

Leadership for learning is referred to as a set of actions that focuses on: 1) Learning improvement, 2) school as learning organization, 3) sessions for learning, 4) collaborative leadership, and 5) accountability (MacBeath et al., 2009). For Hallinger (2011), leadership for learning is an extension of instructional leadership and involving actions such as; 1) focus on learning, 2) creating an atmosphere for learning, 3) organize discussion on teaching and learning, and 4) sharing leadership functions to teachers.

Javed (2012) conducted a study in leadership for learning in Pakistan schools revealed that dialogue and reflection of shared vision was the most important factor for school

achievement. In another study, Paletta et al. (2017) identified that there was a positive relationship between the exercise of leadership for learning and academic achievement.

Sustainable Leadership for Learning

Based on sustainable leadership and sustainable leadership for learning, Ishak and Hussin (2019) developed a new model of leadership namely sustainable leadership for learning. Based on sustainable leadership theory (Hargreaves, 2007) and leadership for learning theory (MacBeath et al., 2009; Hallinger, 2011), the sustainable leadership for learning contains the following characteristics, namely; 1) Develop and disseminate vision and mission, 2) Promote climate for teaching and learning, 3) Building capacity of teachers, 4) Caring and consideration for others, 5) Distributive leadership functions to others, 6) Role model, and 7) Focus on the quality of teaching and learning. Furthermore, to measure this sustainable leadership for learning, this researcher developed a new measurement tool called the Sustainable Leadership for Learning Questionnaire (SLLQ). Since the Sustainable Leadership for Learning Questionnaire (SLLQ) is newly constructed, the findings of the study are not much done.

Job Satisfaction

According to happy-productive thesis, a happy worker is a productive worker (Cropanzano & Wright, 2001). Baluyos et al. (2019) and Soto-Perez et al. (2020) claimed that teachers who are highly satisfied with their work are productive teachers. Based on this thesis, many studies were conducted to explain the phenomenon and found that satisfied teachers are vital in producing student achievement (Wolomasi et al., 2019; Wula et al., 2020). Locke (1969, p. 316) defined job satisfaction as "The pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating one's job values". Spector (1997) opined that job satisfaction is an evaluation by someone regarding their job and it's reflected whether they like or dislike their job.

Based on research findings on teachers' job satisfaction, one question arises here: What are the factors that cause teachers to be satisfied with their work? Although there are many factors that contributed to teachers' job satisfaction, but Hoy and Miskel (2008) mentioned that leadership is the most vital factor contributed to teachers' job satisfaction. Previous studies linking leadership style with teachers' job satisfaction have found that leadership has an impact on teachers' job satisfaction (Bass & Bass, 2008; Cansoy, 2019; Jusoh, 2012; Sabir & Hussin, 2021).

The Relationship between Sustainable Leadership for Learning Model and Job Satisfaction

According to Ishak and Hussin (2019) sustainable leadership for learning is a newly developed model and mainly a combination of two types of leadership namely sustainable leadership (Hargreaves, 2007) and leadership for learning (MacBeath et al., 2009; Hallinger, 2011). This model led to the construction of a measurement tool called the Sustainable Leadership for Learning Questionnaire (SLLQ) (Ishak & Hussin, 2019) as part of Ph.D. thesis of corresponding author. Hence, no study has been conducted to

test the relationship between sustainable leadership for learning model and teachers' satisfaction towards teaching. However, there are studies conducted to test the relationship between sustainable leadership and leadership for learning with job satisfaction.

In studies conducted to test the relationship between sustainable leadership and subordinates' job satisfaction, Suriyankietkaew and Avery (2014), and Hyung-Woo (2017) found that sustainable leadership was a significant predictor to job satisfaction of employees. In a study conducted by Cayak (2021) in education sector, it was found that the influence of sustainable leadership of principals on teacher job satisfaction is significant. While Pietsch et al., (2018) revealed that leadership for learning affected teachers' job satisfaction. Although there is no study conducted on sustainable leadership for learning and its influence on teachers' job satisfaction but based on studies on sustainable leadership and leadership for learning, this study hypothesized that the sustainable leadership for learning of school principals is affected the teachers' satisfaction towards teaching. Hence, the results of this study will contribute to new knowledge related to sustainable leadership for learning and teachers job satisfaction.

Problem Statement

Given that the sustainable leadership and leadership for learning are new theories, and no valid questionnaire to measure both theories simultaneously, Ishak and Hussin (2019) developed a new questionnaire based on the two theories namely Sustainable Leadership for Learning Questionnaire (SLLQ) to measure sustainable leadership for learning.

After running face validity and content validity tests using CVI and construct validity using EFA, seven dimensions emerged with 53 items. The eigenvalue for all dimensions is greater than one (1), while the factor loading for each item is above 0.60. The total variance for all dimensions is more than 61%. Based on the methods of developing the questionnaire as suggested by DeVellis (2017), the SLLQ can be considered a valid questionnaire.

Although SLLQ can already be considered a valid questionnaire, but the process of full testing of this questionnaire has not been done. However, the SLLQ is still needed to test the predictive validity to complete a cycle of validation study. According to Becker (2012), to be classified as a truly valid questionnaire, then further testing must be conducted in terms of predictive validity. Since this questionnaire has not been fully tested, this study was conducted to test the predictive validity of this questionnaire by using teacher satisfaction with teaching as a criterion variable.

Objective the Sudy

Based on the above problem statement, this research is conducted to answer the following questions:

1. Is SLLQ a valid measurement tool in terms of convergent and discriminant validity?

2. Is SLLQ a measuring tool that can make predictive validity to teacher satisfaction with teaching?

Hypothesis of the Sudy

Based on research questions above, the following hypotheses were formulated to test at 0.05 significant level.

H_A: SLLQ is a significant predictor to teachers' satisfaction towards teaching.

METHOD

In order to answer the research question of this study, a cross-sectional survey design was applied. A total of 190 teachers from national primary schools in Kedah Darul Aman were selected randomly to voluntarily participate in this study. The number of samplings in this study is in line with suggestion given by Hair et al. (2014). Two standardized questionnaires namely the Sustainable Leadership for Learning Questionnaire (SLLQ) and Teaching Satisfaction Scale (TSS) were used to measure headmasters' leadership styles and teachers' job satisfaction respectively.

The Sustainable Leadership for Learning Questionnaire (SLLQ) is a valid questionnaire after conducting validation study using content validity index (CVI) and exploratory factor analysis (EFA) as reported by Ishak and Hussin (2019). The factor loading for each item is above 0.60, and the total variance for all dimensions is more than 61%. The SLLQ consist of seven dimensions are; 1) Develop and disseminate vision and mission (SCV – 8 items), 2) Promote climate for teaching and learning (CTL – 7 items), 3) Building capacity of teachers (BCT – 6 items), 4) Caring and consideration for others (CC – 7 items), 5) Distribute leadership functions to others (DL – 8 items), 6) Role model and integrity (RM – 7 items), and 7) Focus on quality teaching and learning (FQ – 10 items).

For Teaching Satisfaction Scale (TSS), this scale was developed by Ho and Au (2006) based on job satisfaction theory formulated by Locke (1969). The five-item scale was tested by Ho and Au (2006) using exploratory factor analysis (EFA), concurrent validity and criterion-related validity. They reported that the factor loading for each item is 0.75 and above, and they claimed that the TSS is valid to measure teachers' satisfaction towards teaching.

The five-point Likert-type scale, from 1 = strongly disagree to 5 = strongly agree was used to score the SLLQ and TSS. Prior to collect actual data, a pilot test was conducted to measure the reliability of questionnaires. A total of 30 respondents were selected randomly to participate in pilot test. The results of pilot test found that the alpha Cronbach for every scale and dimensions of the questionnaires were above 0.70, which is considered reliable as recommended by Nunnally and Bernstein (1994).

FINDINGS

Descriptive Statistics

A total of 190 usable questionnaire were analysed. Of the 190 participants, 61 (32.1%) teachers were male and 129 (67.9%) were female, while 129 (67.9%) were graduate and

61 (32.1%) were non-graduate teachers. All teachers have served the school not less than one year. Mean and standard deviation of the scales used in this study are shown in Table 3 below.

Table 3
Mean, standard deviation, skewness, and kurtosis of the dimensions of SLLQ and TSS

Variables				Skewness			Kurtosis		
	N	Mean	Std. Dev.	Stat.	Std. Error	Z score	Stat.	Std. Error	Z Score
BCT	190	4.0263	.52889	-.226	.176	-1.2840	-.220	.351	-0.6267
CC	190	3.9647	.52898	-.097	.176	-0.5511	.088	.351	0.2507
CTL	190	4.0233	.50330	-.017	.176	-0.0965	-.187	.351	0.5327
DL	190	3.9480	.54023	.097	.176	0.5511	-.116	.351	-0.3304
FQ	190	3.9084	.54872	.313	.176	1.7784	-.244	.351	-0.6951
RM	190	3.8594	.52975	.108	.176	0.6136	-.139	.351	-0.3960
SCV	190	4.0072	.51421	-.167	.176	-0.9488	-.046	.351	-0.1310
SLLQ (HOC)	190	3.9625	.43858	.078	.176	0.4431	-.256	.351	-0.7293
TSS	190	4.0168	.37506	.042	.176	0.2386	.829	.351	2.3618

Note: All values of Z scores <2.58

Although the normal data distribution is not a requirement in the use of PLS-SEM analysis (Hair et al., 2014), but to make the findings of this study more convincing, this study has checked the data distribution whether it is in the normal distribution or otherwise. Based on statistics in Table 3, mean and standard deviation for BCT is 4.02 and .53 respectively, CC (M = 3.96, SD = .53), CTL (M = 4.02, SD = .50), DL (M = 3.94, SD = .54), FQ (M = 3.91, SD = .55), RM (M = 3.86, SD = .53), SCV (M = 4.01, SD = .51), SLLQ (HOC) (M = 3.96, SD = .44), and TSS (M = 4.02, SD = .38). Regarding the skewness and kurtosis of the variables, the Z score for skewness of all dimensions in SLLQ and TSS were between -0.096 to 1.778, while the Z score for kurtosis of all dimensions in SLLQ and TSS were between 0.131 to 2.361. According to Hair et al. (2014), if the values of Z scores for skewness and kurtosis are less than 2.58, it indicates the data are in the normal distribution. Hence, it can be concluded that data of this study is normally distributed.

Assessment of Measurement and Structural Model

Before conducting an assessment on the structural model and testing the hypotheses, this study has conducted an evaluation on the measurement model. According to Hair et al. (2014), the protocol in conducting analysis using PLS-SEM, the measurement model must be determined or established before proceed to assessing the structural model. In order to assess the measurement model, the Smart PLS 3.0 program developed by Ringle et al. (2015) is utilized. Figure 1 shows the model of the study.

In testing the validity of the measurement model, this study used convergent and discriminant validity to validate the model. To assess convergent validity, indicator loadings, Composite Reliability (CR), and Average Variance Extracted (AVE) were used. For indicator loadings the threshold value is .708 or higher, Composite Reliability (CR) is 0.70 or higher, and Average Variance Extracted (AVE) must be 0.50 or higher

(Hair, et al. 2014). To assess discriminant validity, Fornell and Larcker's criterion, cross-loadings, and HTMT criterion were used.
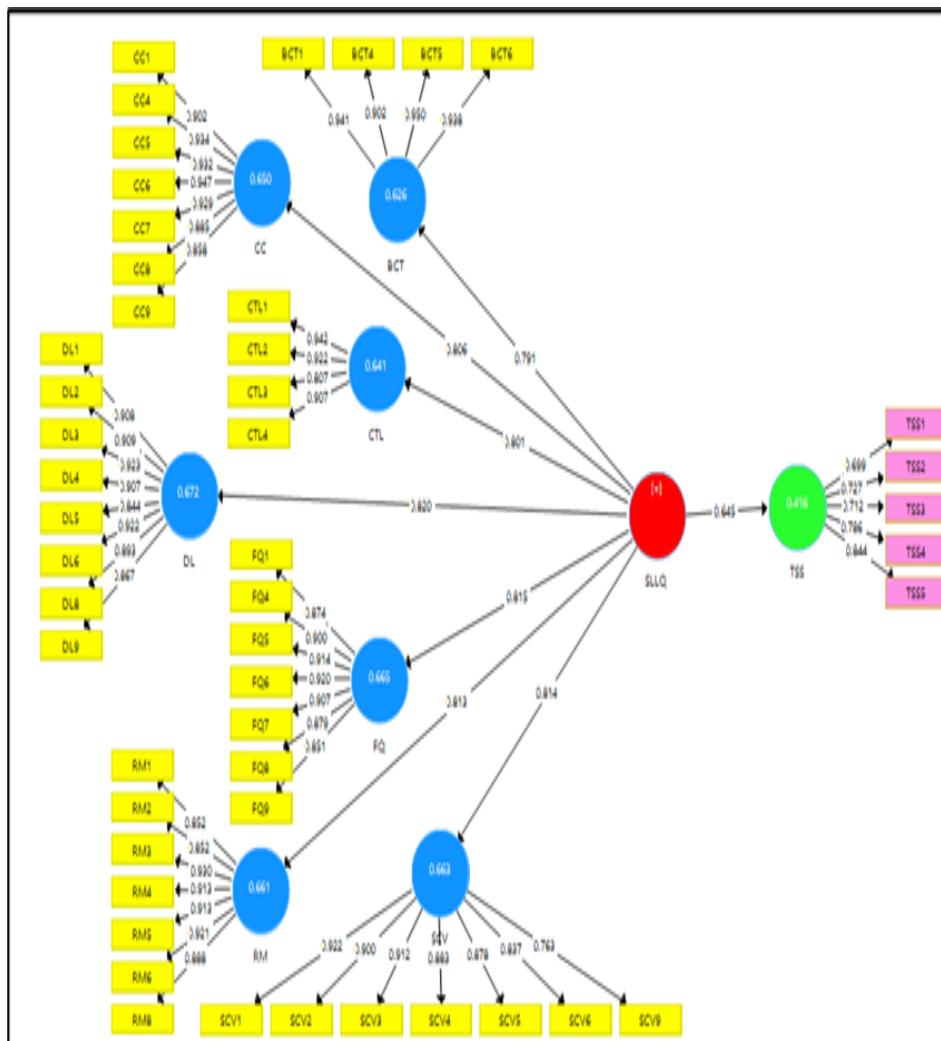

Figure 1
Reflective-reflective measurement and structural model of the study

Table 4
Convergent validity of the measurement model

Construct	Items	Loadings >.60	AVE >.50	CR >.70	Convergent Validity?
Building Capacity of Teachers (BCT)	BCT1	0.941	0.870	0.964	Yes
	BCT4	0.902			
	BCT5	0.950			
	BCT6	0.938			
Caring and Consideration for Others (CC)	CC1	0.902	0.834	0.972	Yes
	CC4	0.934			
	CC5	0.932			
	CC6	0.947			
	CC7	0.929			
	CC8	0.885			
	CC9	0.858			
Promote climate for teaching and learning (CTL)	CTL1	0.942	0.803	0.942	Yes
	CTL2	0.922			
	CTL3	0.807			
	CTL4	0.907			
Distribute Leadership Functions to Others (DL)	DL1	0.908	0.805	0.971	Yes
	DL2	0.909			
	DL3	0.923			
	DL4	0.907			
	DL5	0.844			
	DL6	0.922			
	DL8	0.893			
	DL9	0.867			
Focus on Quality Teaching and Learning (FQ)	FQ1	0.874	0.796	0.965	Yes
	FQ4	0.900			
	FQ5	0.914			
	FQ6	0.920			
	FQ7	0.907			
	FQ8	0.879			
	FQ9	0.851			
Role Model and Integrity (RM)	RM1	0.852	0.803	0.966	Yes
	RM2	0.852			
	RM3	0.930			
	RM4	0.913			
	RM5	0.913			
	RM6	0.921			
	RM8	0.888			
Develop and disseminate vision and mission (SCV)	SCV1	0.922	0.760	0.957	Yes
	SCV2	0.900			
	SCV3	0.912			
	SCV4	0.883			
	SCV5	0.878			
	SCV6	0.837			
	SCV8	0.763			
Sustainable Leadership for Learning Questionnaire SLLQ (HOC)	(BCT1-SV8 (44 items)	Lowest = 0.642 Highest = 0.786	0.529	0.980	Yes
Teaching Satisfaction Scale (TSS)	TSS1	0.699	0.571	0.869	Yes
	TSS2	0.727			
	TSS3	0.712			
	TSS4	0.786			
	TSS5	0.844			

Based on Table 4, factor loading for Lower Order Construct (LOC) consisting of BCT (4 items), CC (7 items), CTL (4 items), DL (8 items), FQ (7 items), RM (7 items) and SV (7 items) ranged from 0.763 to 0.950. All outer loadings exceeded the threshold point (> 0.708), while the AVE for BCT, CC, CTL, DL, FQ, RM and SV ranged from 0.760 to 0.870, and the CR for those dimensions ranged from 0.942 to 0.972. All AVE and CR values were above the threshold point (AVE> 0.50; CR> 0.70). With respect to SLLQ as the Higher Order Construct (HOC) represented by BCT, CC, CTL, DL, FQ, RM, and SV, the outer loadings for the item ranged from 0.642 to 0.786, of which nine items were below the threshold point of 0.708. AVE and CR for SLLQ (HOC) were 0.529 and 0.980, respectively. Regarding the TSS construction, the loading factors for all items ranged from 0.699 to 0.844, while the AVE and CR values were 0.571 and 0.869, respectively.

Although nine items of SLLQ (HOC) construct and one item of TSS construct were below threshold point, but these items were acceptable because average variance extracted (AVE) and composite reliability (CR) of SLLQ (HOC) and TSS have reached the threshold point (AVE >0.50; CR >0.70). Hair et al. (2014) mentioned that if AVE and CR for the construct is exceeding the threshold point, the items with loading less than 0.60 can be retained in the measurement model. However, nine items or 16.98% of the total items in SLLQ construct were dropped in the final model due to cross-loading of less than 0.1. Chin (1998) mentioned that the item with cross-loading less than 0.1 must be deleted. Hair et al. (2014) advised the researcher not to drop items more than 20%. The items deleted were BCT2, BCT3, CTL5, CTL6, CTL7, FQ2, FQ3, FQ11, and SCV7. Finally, 44 items of SLLQ were retained. Based on both SLLQ and TSS data, it can be concluded that both measurement model of SLLQ and TSS are fulfil the convergent validity.

After conducting the convergent validity, the questionnaire was validated again based on discriminant validity requirements. For the purpose of fulfilling the requirement, the Fornell and Larcker's criterion, cross-loadings, and HTMT criterion were used. Table 5 shows the data of the discriminant validity using Fornell and Larker criterion. Fornell and Larker (1981) argued that the square root of AVE (diagonal) must be larger than the correlations (off-diagonal) for all reflective constructs. Based on the data, the value of square root of the AVE's are larger than the correlations between the constructs. However, according to Hair et al. (2018), if square root of AVE of the higher order constructs (HOC) is smaller than the correlation values of the lower order construct (LOC), it is not a concern of discriminant validity. Therefore, based on Fornell and Larker criterion, the discriminant validity of the measurement model is acceptable.

Table 5
Discriminant validity of measurement model using fornell and larker criterion

	BCT	CC	CTL	DL	FQ	RM	SCV	SLLQ (HOC)	TSS
BCT	0.933								
CC	0.621	0.913							
CTL	0.595	0.662	0.896						
DL	0.508	0.568	0.635	0.897					
FQ	0.570	0.560	0.585	0.620	0.892				
RM	0.530	0.505	0.584	0.706	0.662	0.896			
SCV	0.795	0.647	0.607	0.502	0.572	0.550	0.872		
SLLQ-(HOC)	0.791	0.806	0.801	0.820	0.815	0.813	0.814	0.727	
TSS	0.606	0.492	0.526	0.454	0.534	0.467	0.624	0.645	0.756

Note: $\sqrt{}$ AVE (diagonal) > r^2 except for SLLQ (HOC), but acceptable (Hair et al., 2018)

To ensure that discriminant validity has reached its level, the researcher once again made an assessment of discriminant validity based on cross-loading criteria. Table 6 shows all the values of cross-loadings of the items of the questionnaires with other constructs used in this study are less than 0.1. Chin (1998) mentioned that if no item with cross-loading smaller than 0.1, it indicates there is no issue related to cross-loading. Therefore, the discriminant validity of the measurement model based on cross-loading is accepted.

Table 6
Discriminant validity of measurement model using cross-loadings

	BCT	CC	CTL	DL	FQ	RM	SCV	SLLQ (HOC)	TSS
BCT1	0.941	0.594	0.579	0.490	0.536	0.508	0.738	0.751	0.617
BCT4	0.902	0.572	0.604	0.506	0.584	0.519	0.706	0.753	0.531
BCT5	0.950	0.566	0.524	0.423	0.499	0.464	0.780	0.718	0.597
BCT6	0.938	0.583	0.511	0.471	0.504	0.483	0.741	0.726	0.515
CC1	0.570	0.902	0.634	0.506	0.530	0.465	0.621	0.745	0.503
CC4	0.560	0.934	0.617	0.503	0.481	0.478	0.587	0.734	0.414
CC5	0.564	0.932	0.604	0.479	0.458	0.452	0.575	0.716	0.430
CC6	0.555	0.947	0.615	0.514	0.498	0.461	0.609	0.743	0.458
CC7	0.611	0.929	0.568	0.558	0.549	0.450	0.609	0.758	0.477
CC8	0.563	0.885	0.571	0.545	0.542	0.484	0.593	0.743	0.484
CC9	0.542	0.858	0.621	0.520	0.518	0.434	0.536	0.710	0.373
CTL1	0.500	0.584	0.942	0.584	0.537	0.535	0.526	0.721	0.469
CTL2	0.518	0.624	0.922	0.618	0.562	0.550	0.551	0.749	0.471
CTL3	0.582	0.606	0.807	0.552	0.502	0.492	0.560	0.705	0.479
CTL4	0.534	0.553	0.907	0.516	0.491	0.512	0.535	0.689	0.465
DL1	0.483	0.549	0.614	0.908	0.616	0.646	0.475	0.773	0.415
DL2	0.462	0.501	0.593	0.909	0.575	0.621	0.462	0.743	0.398
DL3	0.420	0.479	0.549	0.923	0.525	0.630	0.428	0.718	0.451
DL4	0.452	0.500	0.548	0.907	0.562	0.665	0.459	0.742	0.453
DL5	0.422	0.460	0.476	0.844	0.521	0.603	0.424	0.682	0.347
DL6	0.499	0.555	0.634	0.922	0.607	0.675	0.482	0.786	0.436
DL8	0.459	0.524	0.579	0.893	0.521	0.596	0.455	0.726	0.381
DL9	0.439	0.499	0.552	0.867	0.512	0.629	0.410	0.706	0.372
FQ1	0.569	0.546	0.524	0.572	0.874	0.642	0.539	0.760	0.470
FQ4	0.528	0.492	0.528	0.547	0.900	0.610	0.527	0.736	0.454
FQ5	0.523	0.482	0.501	0.523	0.914	0.614	0.537	0.730	0.488
FQ6	0.464	0.466	0.511	0.544	0.920	0.568	0.508	0.712	0.468
FQ7	0.442	0.461	0.505	0.530	0.907	0.574	0.464	0.695	0.464
FQ8	0.489	0.476	0.546	0.569	0.879	0.569	0.461	0.710	0.487
FQ9	0.535	0.568	0.537	0.583	0.851	0.548	0.532	0.741	0.500
RM1	0.501	0.478	0.530	0.693	0.602	0.852	0.480	0.742	0.408
RM2	0.455	0.412	0.470	0.649	0.600	0.852	0.463	0.703	0.429
RM3	0.489	0.442	0.537	0.643	0.592	0.930	0.498	0.740	0.423
RM4	0.466	0.431	0.505	0.595	0.536	0.913	0.492	0.705	0.385
RM5	0.444	0.429	0.504	0.610	0.568	0.913	0.481	0.709	0.431
RM6	0.464	0.487	0.549	0.615	0.612	0.921	0.510	0.745	0.409
RM8	0.498	0.481	0.562	0.621	0.634	0.888	0.522	0.751	0.440
SCV1	0.734	0.563	0.515	0.408	0.490	0.469	0.922	0.713	0.522
SCV2	0.729	0.581	0.541	0.477	0.469	0.477	0.900	0.722	0.570
SCV3	0.719	0.557	0.531	0.422	0.476	0.447	0.912	0.706	0.543
SCV4	0.704	0.558	0.486	0.448	0.524	0.498	0.883	0.718	0.537
SCV5	0.680	0.591	0.565	0.489	0.534	0.534	0.878	0.748	0.550
SCV6	0.702	0.562	0.560	0.459	0.507	0.478	0.837	0.714	0.566
SCV8	0.570	0.532	0.501	0.372	0.490	0.447	0.763	0.642	0.517
TSS1	0.420	0.293	0.334	0.276	0.305	0.337	0.430	0.415	0.699
TSS2	0.443	0.397	0.386	0.356	0.412	0.361	0.517	0.504	0.727
TSS3	0.518	0.330	0.315	0.265	0.337	0.270	0.452	0.428	0.712
TSS4	0.413	0.425	0.442	0.391	0.451	0.406	0.450	0.523	0.786
TSS5	0.504	0.399	0.486	0.405	0.483	0.377	0.506	0.549	0.844

Note: No cross-loading <0.1

Although the data based on Fornell and Larker criteria as well as cross-loading criteria indicate the existence of discriminant validity for SLLQ and TSS questionnaires, but to further strengthen these findings, this study conducted another analysis of discriminant validity by using Heterotrait-Monotrait Ratio (HTMT) criteria. According to Henseler et al. (2015) and Ab-Hamid (2017), the HTMT criterion is more stringent discriminant validity criterion compared to the Fornell and Larker criteria as well as cross-loading because HTMT criterion is able to detect very small value of collinearity among the latent constructs.

Table 7 shows the discriminant validity based on HTMT criterion. As shown in Table 7, all the values of the latent constructs were below 0.850. According to Kline (2005), if the value of HTMT criterion is <0.850, it fulfils the HTMT criterion, and the construct can be regarded as fulfil the discriminant criteria. Hence, the discriminant validity of measurement model has been established.

Table 7
Discriminant validity of measurement model using HTMT criterion

	BCT	CC	CTL	DL	FQ	RM	SCV	SLLQ HOC	TSS
BCT									
CC	0.647								
CTL	0.638	0.703							
DL	0.529	0.587	0.673						
FQ	0.595	0.581	0.624	0.643					
RM	0.554	0.523	0.622	0.734	0.689				
SCV	0.837	0.676	0.652	0.524	0.601	0.577			
SLLQ-HOC	0.815	0.827	0.844	0.845	0.842	0.842	0.843		
TSS	0.694	0.551	0.604	0.506	0.598	0.526	0.713	0.718	

Note: All values <0.850.

Besides, this study also uses the HTMT inference indexes. Table 8 shows the HTMT inference index (Confidence Interval Bias Corrected (5% - 95%). All values of HTMT inference were less than 1. According to Henseler et al. (2015), if the HTMT inference value is less than 1, it indicates the discriminant validity of the construct is accepted.

Table 8
Discriminant validity of measurement model using HTMT inference (Confidence
Interval Bias Corrected)

	Original Sample (O)	Sample Mean (M)	5%	95%
CC -> BCT	0.647	0.647	0.570	0.720
CTL -> BCT	0.638	0.639	0.542	0.725
CTL -> CC	0.703	0.703	0.622	0.779
DL -> BCT	0.529	0.527	0.427	0.620
DL -> CC	0.587	0.585	0.498	0.666
DL -> CTL	0.673	0.671	0.581	0.752
FQ -> BCT	0.595	0.596	0.510	0.671
FQ -> CC	0.581	0.580	0.496	0.656
FQ -> CTL	0.624	0.624	0.533	0.705
FQ -> DL	0.643	0.642	0.561	0.715
RM -> BCT	0.554	0.554	0.450	0.648
RM -> CC	0.523	0.522	0.430	0.610
RM -> CTL	0.622	0.621	0.526	0.711
RM -> DL	0.734	0.732	0.657	0.801
RM -> FQ	0.689	0.688	0.609	0.759
SCV -> BCT	0.837	0.837	0.789	0.879
SCV -> CC	0.676	0.676	0.601	0.745
SCV -> CTL	0.652	0.653	0.565	0.734
SCV -> DL	0.524	0.523	0.419	0.621
SCV -> FQ	0.601	0.601	0.514	0.681
SCV -> RM	0.577	0.576	0.471	0.671
SLLQ -> BCT	0.815	0.815	0.769	0.859
SLLQ -> CC	0.827	0.826	0.781	0.868
SLLQ -> CTL	0.844	0.844	0.792	0.889
SLLQ -> DL	0.845	0.844	0.803	0.881
SLLQ -> FQ	0.842	0.842	0.798	0.882
SLLQ -> RM	0.842	0.841	0.798	0.879
SLLQ -> SCV	0.843	0.843	0.799	0.883
TSS -> BCT	0.694	0.694	0.617	0.762
TSS -> CC	0.551	0.550	0.451	0.643
TSS -> CTL	0.604	0.604	0.507	0.694
TSS -> DL	0.506	0.506	0.402	0.606
TSS -> FQ	0.598	0.599	0.508	0.684
TSS -> RM	0.526	0.526	0.429	0.617
TSS -> SCV	0.713	0.713	0.628	0.790
TSS -> SLLQ	0.718	0.719	0.648	0.783

Note: All values of HTMT inference (5%-95%) <1.0

Based on Fornell and Larker criterion, cross-loadings, HTMT criterion, and HTMT inference, it can be concluded that the measurement model of SLLQ and TSS are valid questionnaires in term of discriminant validity. In conclusion, it can be stated that the SLLQ and TSS questionnaires are valid and reliable questionnaires based on the assessment conducted using convergent and discriminant validity criteria.

Before performing hypothesis testing in PLS-SEM analysis, researchers are required to review the collinearity between exogenous variables and endogenous variables. Table 9 shows that the index of lateral collinearity based-on variance inflator factor (VIF) is 1.000. According to Hair et al. (2014), if the internal VIF index is below the value of 3, it can be interpreted that there is no issue related collinearity between SLLQ and TSS.

Therefore, in this case, there is no issue related to VIF, and testing the hypothesis is allowed to performed.

Table 9
Results of hypothesis testing

H_A	R	Std Beta	t-value	p	Decision	R^2 Adjusted	f^2	Q^2	VIF
H_A	SLLQ→ TSS	0.645	16.078	0.000	Supported	0.413	0.713	0.228	1.000

Note: HA = Alternative Hypothesis; R = Regression; SLLQ = Sustainable Leadership for Learning Questionnaire; TSS = teachers' satisfaction towards teaching

Based on the statistics in Table 9, this study found that sustained learning leadership (SLLQ) was a significant predictor of teacher satisfaction with teaching (TSS). The value of β = 0.645, R^2 adjusted = 0.413, t = 16.078, was significant at 0.001. The adjusted R^2 value of 0.413 can be translated that the SLLQ explains 41.3% of the variances in teachers' satisfaction towards teaching (TSS). Furthermore, the adjusted R^2 value of 0.413 exceeds the value of 0.26, which according to Cohen (1988) it indicates a substantial model. While the value of f^2 was 0.713, which according to Cohen (1988), if the value of f^2 is above 0.35 the effect size is substantial. Therefore, the hypothesis stating that SLLQ is a significant predictor of TSS is supported. In addition, the blindfolding procedure was used to test the predictive relevance of the model. Based on the blindfolding results, the Q^2 value is 0.228, which is greater than 0. According to Hair et al. (2014), if the value of Q^2 is greater than 0, the model has a relevant prediction. Thus, it can be concluded that SLLQ is a significant predictor of TSS and meets the predictive validity criteria.

DISCUSSION

Validity of the Measurement Model

In terms of convergent validity assessment, it was found that the SLLQ questionnaire has reached the minimum level of Composite Reliability (CR) and Average Extracted Variance (AVE) set at CR> 0.70 and AVE> 0.50 as proposed by Hair et al. (2014). The AVE and CR values obtained by the SLLQ questionnaire are 0.0529 and 0.980, respectively. Therefore, this questionnaire is considered valid based on convergent validity criterion.

Based on the discriminant analysis, it was found that the SLLQ questionnaire is a questionnaire that has achieved the discriminant criteria either based on Fornell and Larker criteria, cross-loading, HTMT criterion and HTMT inference. This study found that the square root value of AVE for all constructs, was larger than the correlation value with other constructs. According to Fornell and Larker (1981), if the value of the square root AVE is greater than the value of the correlation between constructs, then discriminant validity has existed. In addition, this study also found that no value of cross-loadings between questionnaire items with other constructs was smaller than 0.1. According to Chin (1998), this value indicates that discriminant validity between constructs exists. In addition, based on the HTMT criteria, it was found that all values

obtained were smaller than <0.850. according to Kline (2005), this value indicates that the questionnaire has reached the minimum level of discriminant value set. Similarly, when looking at the HTMT inference, it was found that all confidence interval values did not reach the value of 1. According to Henseler et al. (2015), this indicates that this questionnaire has a good level of discriminant value. Therefore, it can be concluded that the SLLQ questionnaire is a questionnaire that has met the criteria of discriminant validity set.

In conclusion, the SLLQ questionnaire is a valid questionnaire because it has met the criteria either set by convergent validity and discriminant validity. With these new findings, it can be stated that this measuring tool can be used in future researches without hesitation.

Sustainable Leadership for Learning as Predictor for Teachers' Satisfaction towards Teaching

This study found that, Sustainable Leadership for Learning Questionnaire (SLLQ) is a significant predictor for teachers' satisfaction towards teaching. This result is in line with the studies conducted by Suriyankietkaew and Avery (2014), Lee (2017) and Dalati et al. (2017) which found that sustainable leadership were related significantly to employees' satisfaction. The plausible explanation for this finding is whenever a school principal practices SLLQ, it reflects the principals are practicing behaviour such as fostering a conducive climate for teaching and learning climate, creating and disseminating the vision and mission of the school, emphasizing on the quality of teaching and learning, caring and consideration behaviour, building the capacity of teachers, distributes leadership functions to teachers, and demonstrating role model behaviours.

According to Thapa et al. (2013) the act of fostering conducive climate is the actions taken by school principal to protect teaching process from unnecessary disruption, and in turn teachers are happy to teach. Ismail et al. (2018a) claimed that promoting school learning climate is affected teachers to function well. Maxwell et al. (2017) found that if the school can prevent significantly the students' misbehaviours, the teacher will happy and they can concentrate more on core technology of schooling. Studies found that conducive climate for teaching and learning contributed to high satisfaction on the part of teachers (Katsantonis, 2020; Toropova et al. 2020).

In addition, the actions of principals who lead the school by focusing on achieving the vision and mission of the school will cause teachers to be in a clear state of direction in doing their job. According to goal setting theory, clear goals lead to satisfaction on the part of subordinates (Latham & Locke, 2007). Jung (2013) argued that if there is no ambiguity in the vision and direction, it will cause subordinates to feel happy and satisfied with their job. Skaalvik and Skaalvik (2013) found that goal setting directly influence teachers job satisfaction. Ismail et al. (2018b) argued that in order to ensure the teachers doing their work happily, the school leadership is needed to provide a clear mission and direction to teachers.

Apart from that, focus on quality teaching also important in making teachers satisfied with their job. According to Androwis et al. (2018), whenever organization adopts

quality management, every step and actions are taken based on proven effective methods, and consequently improve the quality products and services. The improvement in quality products and services lead to happiness in the part of employees. Research on quality management concluded that quality management has an impact on job satisfaction of employees (Ali et al., 2020).

Moreover, SSLQ is capable of being a predictor to teachers' job satisfaction because in the SLLQ contains an element of consideration leadership style. According to Bass and Riggio (2008) if the leader adopts considerate leadership style, the subordinates will be satisfied with their work. This situation occurs because consideration leadership style adopts a caring, empathy, fulfill the needs of subordinates, and assigns tasks to subordinates based on their abilities and skills, which ultimately resulted satisfaction in the part of subordinates (Bass & Riggio, 2008). Daud et al. (2018) claimed that the support from school leadership will affect teachers' job satisfaction. Research conducted by Khan et al. (2020) found that consideration was related to job satisfaction of subordinates.

Furthermore, consideration leadership styles always provide in-service training programs for their subordinates (Bass & Riggio, 2008). This action is taken by the leaders for the purpose of transforming subordinates to become more skillful and competence. Yaakob et al. (2020) stressed that teachers are needed more in-service training programs to uplift their skills and competencies. In several studies conducted by Zhang and Yuan (2020) found that in-service training programs correlated with job satisfaction of employees.

In addition, the SLLQ leadership style also adopts shared leadership style, where delegating tasks and involving staff in organizational decision making is a routine practice. These actions cause teachers to feel they are valued and recognized for their expertise and abilities. According to self-determination theory (Ryan & Deci, 2000) whenever someone is given an autonomy to accomplish work given, they will feel valued and recognized, and in turn they feel satisfied with their job. Al-Bataineh et al. (2021) found that teacher autonomy correlated with teacher's happy feeling. Researches conducted by Liu et al. (2020) and Samancioglu et al. (2020) found that distributed leadership correlated with teachers' job satisfaction.

Apart from that, role model is one of the components in SLLQ. Theoretically, leaders who practice this style have an attitude of honesty and integrity (Kouzes & Posner, 2017). Conger and Kanugo (1994) stated that if a leader exhibits a role model to subordinates, it makes subordinates feel comfortable with the leader and thus satisfaction begins to grow in the subordinate. Research conducted by Davis and Rothstein (2006) found that the leaders who practices role model have an impact on subordinates' job satisfaction.

LIMITATION AND RECOMMENDATIONS FOR FUTURE STUDY

Although the result of the present study is quite encouraging, but it is necessary to point out some limitations. Firstly, the sampling of this study is limited to teachers who served national primary school in Kedah. To confirm the result of this study, future studies are

needed to be conducted in other settings such as secondary schools and using large sample size.

Secondly, this study used only teachers' job satisfaction as predictive variable. Given that there are many criterion variables in school organization, studies in future should be conducted to use other variables such as teachers' commitment, teachers' organizational citizenship behavior, teachers' motivation towards teaching, school climate, and school effectiveness.

Thirdly, this study suggests that future studies be conducted using SEM-AMOS analysis. This is intended to confirm whether the questionnaire is valid or otherwise.

CONCLUSION

Based on the results of the convergent and discriminant validity, it can be concluded that the Sustainable Leadership for Learning Questionnaire (SLLQ), a newly developed questionnaire is a valid measurement tool to measure sustainable leadership for learning of the school principal. Apart from that, this study also confirms that SLLQ is a measurement tool that can be used to make predictions on teacher's satisfaction towards teaching.

REFERENCES

Ab-Hamid, M. R., Sami, W., & Sidek, M. H. M. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. *Journal of Physics: Conf. Series 890*(2017), 012163. doi :10.1088/1742-6596/890/1/012163

Al-Bataineh, O. T., Mahasneh, A. M., & Al-Zoubi, Z. (2021). The correlation between level of school happiness and teacher autonomy in Jordan. *International Journal of Instruction*, *14*(2), 1021-1036. https://doi.org/10.29333/iji.2021.14258a

Ali, A., Rehman, S., Asif, M., & Iqbal, N. (2020). Effect of soft TQM practices on job satisfaction and organizational commitment of healthcare professionals. *International Journal of Management Research & Emerging Sciences, 10*(1), 56-66.

Androwis, N., Sweis, R. J., Tarhini, A., Moarefi, A., & Hosseini Amiri, M. (2018). Total quality management practices and organizational performance in the construction chemicals companies in Jordan. *Benchmarking: An International Journal, 25*(8), 3180-3205. DOI:10.1108/bij-05-2017-0094

Baluyos, G. R., Rivera, H. L., & Baluyos, E. L. (2019). Teachers' job satisfaction and work performance. *Open Journal of Social Sciences, 7*, 206-221. https://doi.org/10.4236/jss.2019.78015

Bass, B. M., & Bass, R. (2008). *The Bass handbook of leadership: Theory, research, and managerial applications*. New York: The Free Press.

Bass, B. M., & Riggio, R. E. (2008). *Transformational leadership* (2nd Ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.

Becker, J. M., Klein, K., & Wetzels, M. (2012). Hierarchical latent variable models in PLS-SEM: guidelines for using reflective-formative type models. *Long Range Planning, 45*(5-6), 359-394.

Bush, T. (2020). *Theories of educational leadership and management* (5th ed.). London: SAGE

Cansoy, R. (2019). The relationship between school principals' leadership behaviours and teachers' job satisfaction: A systematic review. *International Education Studies,12*(1), 37-52.

Çayak, S. (2021). The effect of sustainable leadership behaviors of school principals on teachers' organizational commitment and job satisfaction. *Discourse and Communication for Sustainable Education, 12*(1), 102-120. DOI: 10.2478/dcse-2021-0008

Chen, Y. G., Cheng, J. N., & Sato, M. (2017). Effects of school principals' leadership behaviors: A comparison between Taiwan and Japan. *Educational Sciences: Theory & Practice, 17*, 145-173. http://dx.doi.org/10.12738/estp.2017.1.0018

Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling. *MIS Quarterly, 22*(1), 1. http://doi.org.Editorial

Cohen, J. (1988). *Statistical power analysis for the behavioral science* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Conger, J. A., & Kanungo, R. N. (1994). Charismatic leadership in organizations: Perceived behavioral attributes and their measurement. *Journal of Organizational Behavior, 15*(5), 439-452. https://doi.org/10.1002/job.4030150508

Cornescu, V. & Adam, R. (2016). Organizational Change — Managing Employees. In Ovidiu Nicolescu (edt.). *Challenges, Performances and Tendencies in Organisation Management*, pp. 381-389. DOI: 10.1142/9789814656023_0042

Cropanzano, R., & Wright, T. A. (2001). When a "happy" worker is really a "productive" worker a review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research, 53*(3), 182-199. DOI: 10.1037//106W087.53.3.182

Dalati, S., Raudeliuniene, J., & Davidaviciene, V. (2017). Sustainable leadership, organizational trust on job satisfaction: Empirical evidence from higher education institutions in Syria. *Business, Management and Education, 15*(1), 14-27. DOI:10.3846/bme.2017 .360

Daud, Y., Dali, P. D., Khalid, R., & Fauzee, M. S. O. (2018). Teaching and Learning Supervision, Teachers' Attitude towards Classroom Supervision and Students' Participation. *International Journal of Instruction*, *11*(4), 513-526. https://doi.org/10.12973/iji.2018.11432a

Davis, A. L., & Rothstein, H. R. (2006). The effects of the perceived behavioral integrity of managers on employee attitudes: A meta-analysis. *Journal of Business Ethics, 67*, 407-419. DOI: 10.1007/s10551-006-9034-4

DeVellis, R. F. (2017). *Scale development: Theory and applications*. London: SAGE.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(3), 39-50. http://doi.org/10.2307/3151312

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer partial least squares structural equation modeling (PLS-SEM)*. London: SAGE.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2018). *Advanced issues in partial least squares structural equation modeling*. London: SAGE.

Hallinger, P. (2011). Leadership for learning: lessons from 40 years of empirical research. *Journal of Educational Administration, 49*(2), 125-142. http://dx.doi.org/10.1108/09578231111116699

Hargreaves, A. (1997). Cultures of teaching and educational change. In B. J. Biddle, T. L. Good, & I. V. Goodson (Ed.), *International handbook of teachers and teaching.* 1297-1319. Dordrecht: Springer. https://doi.org/10.1007/978-94-011-4942-6

Hargreaves, A. (2007). Sustainable leadership and development in education: Creating the future, conserving the past. *European Journal of Education, 42*(2), 223-233.

Hattie, J. (2003). *Teachers make a difference: What is the research evidence?* Paper presented at the Building Teacher Quality: What does the research tell us ACER Research Conference, Melbourne, Australia. Retrieved from http://research.acer.edu.au/research_conference_2003/4/

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115-135. http://doi.org/10.1007/s11747-014-0403-8

Ho, C. L. & Au, W. T. (2006). Teaching satisfaction scale: Measuring job satisfaction of teachers. *Educational and Psychological Measurement*, *66*(1), 172-185.

Hoy, W. K., & Miskel, C. G. (2008). *Educational administration: Theory, research and practice* (8th ed.). New York: McGraw Hill Higher Education.

Hyung-Woo, L. (2017). Sustainable leadership: An empirical investigation of its effect on organizational effectiveness. *International Journal of Organization Theory and Behavior; Boca Raton, 20*(4)*,* 419-453. DOI:10.1108/IJOTB-20-04-2017-B001

Iqbal, Q., Ahmad, N. H. (2020). Sustainable development: The colors of sustainable leadership in learning organization. *Sustainable Development. 2020*;1-12. https://doi.org/10.1002/sd.2135

Ishak, M., & Hussin, F. (2019). The sustainable leadership for learning: The development of standardized questionnaire. *Proceeding International Conference of Research and Education for Educators (ICREE) 2019*, 57-60. Pertubuhan Penyelidikan dan Pendidikan Pendidik Malaysia: Bandar Baru Bangi.

Ismail, S. N., Don, Y., Husin, F., & Khalid R. (2018a). Instructional leadership and teachers' functional competency across the 21st century learning. *International Journal of Instruction*, *11*(3), 135-152. https://doi.org/10.12973/iji.2018.11310a

Ismail, S. N., & Meran, M. (2021). The relationship between teacher's job satisfaction with teacher's job performance at primary schools. *Research in Management of Technology and Business, 2*(1), 293–307

Ismail, S. N., Muhammad, F., Kanesan, A. G., & Yaacob, A. (2018b). Teacher Collaboration as a Mediator for Strategic Leadership and Teaching Quality. *International Journal of Instruction*, *11*(4), 485-498. https://doi.org/10.12973/iji.2018.11430a

Javed, U. (2012). *Leadership for learning: A case study in six public and private schools of Pakistan*. Degree of Doctor of Philosophy, University of Birmingham.

Jung, C. S. (2013). Organizational goal ambiguity and job satisfaction in the public sector. *Journal of Public Administration Research and Theory, 24*(4), 955-981. DOI:10.1093/jopart/mut020

Jusoh, R. (2012). *Job satisfaction of new teachers in Malaysia: Understanding challenges and experiences of leaving the profession*. Doctor of Philosophy Thesis, Colorado State University, Fort Collins, Colorado.

Katsantonis, I. G. (2020). Investigation of the impact of school climate and teachers' self-efficacy on job satisfaction: A cross-cultural approach. *European Journal Investigating Health, Psychology and Education, 10*, 119-133; DOI:10.3390/ejihpe10010011

Khan, S. U. R., Anjam, M., Abu Faiz, M., Khan, F., & Khan, H. (2020). Probing the effects of transformational leadership on employees' job satisfaction with interaction of organizational learning culture. *SAGE Open, 10(2), 215824402093077.* DOI:10.1177/2158244020930771

Kline, R. B. (2005). *Principles and practice of structural equation modelling* (2nd ed.). New York: The Guilford Press.

Kouzes, J. M., & Posner, B. Z. (2017). *The leadership challenge: How to make extraordinary things happen in organizations* (6th Edition). New Jersey: John Wiley & Sons.

Latham, G. P., & Locke, E. A. (2007). New developments in and directions for goal-setting research. *European Psychologist, 12*(4), 290-300. DOI: 10.1027/1016-9040.12.4.290

Lee, H-W. (2017). Sustainable leadership: An empirical investigation of its effect on organizational effectiveness. *International Journal of Organization Theory and Behavior, 20* (4), 419-453. DOI: 10.1108/IJOTB-20-04-2017-B001

Liu, Y., Bellibaş, M. Ş., & Gümüş, S. (2020). The effect of instructional leadership and distributed leadership on teacher self-efficacy and job satisfaction: mediating roles of supportive school culture and teacher collaboration. *Educational Management Administration & Leadership, 174114322091043,* 1-24. DOI: 10.1177/1741143220910438

Locke, E. A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance, 4*(4), 309–336. DOI:10.1016/0030-5073(69)90013-0

MacBeath, J., Swaffied, S., & Frost, D. (2009). Principled Narrative: The Carpe Vitam project. *International Journal of Leadership in Education,* 12(3), 223-237.

Malaysia. (2018). *Kajian separuh penggal rancangan Malaysia kesebelas RMK ke-11.* https://www.parlimen.gov.my/kajian_separuh_penggal_rancangan_malaysia_kesebelas_rmke-11.html

Mao, C., Koide, R., & Akenji, L. (2019). *Society and lifestyles in 2050: Insights from a global survey of experts*, IGES Discussion Paper: Institute for Global Environmental Strategies, Hayama, Japan.

Maxwell, S., Reynolds, K. J., Lee, E., Subasic, E., & Bromhead, D. (2017). The impact of school climate and school identification on academic achievement: multilevel modeling with student and teacher data. *Frontiers in Psychology, 8.* DOI: 10.3389/fpsyg.2017.02069

Ministry of Education Malaysia. (2013). *Malaysia Education Blueprint 2013-2025 (Preschool to Post-Secondary Education).* Ministry of Education Malaysia: Putrajaya Malaysia

Nunnally, J. C. & Bernstein, I. H. (1994). *Psychometric theory*. New York: McGraw-Hill.

Paletta, A., Alivernini, F., & Manganelli, S. (2017). Leadership for learning: The relationships between school context, principal leadership and mediating variables. *International Journal of Educational Management, 31*(2), 98-117. https://doi.org.eserv.uum.edu.my/10.1108/IJEM-11-2015-0152

Pietsch, M., Tulowitzki, P., & Koch, T. (2018). On the differential and shared effects of leadership for learning on teachers' organizational commitment and job satisfaction: A multilevel perspective. *Educational Administration Quarterly, 0013161X1880634.* doi:10.1177/0013161x18806346

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *SmartPLS 3*. Boenningstedt: SmartPLS GmbH, http://www.smartpls.com.

Ryan, R. M., & Deci, R. M. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist 55*(1), 68-78.

Sabir, F. & Hussin, F. (2021). Effectiveness of leadership styles, motivation factors and performance appraisal towards teachers' job satisfaction at secondary level. *Psychology and Education, 58*(4), 440-450.

Samancioglu, M., Baglibel, M., & Erwin, B. J. (2020). Effects of distributed leadership on teachers' job satisfaction, organizational commitment and organizational citizenship. *Pedagogical Research, 5*(2), em0052. https://doi.org/10.29333/pr/6439

Sezgin-Nartgün, Ş., Limon, İ., & Dilekçi, Ü. (2020). The relationship between sustainable leadership and perceived school effectiveness: the mediating role of work effort. *Bartın University Journal of Faculty of Education, 9*(1), 141-154.

Skaalvik, E. M., & Skaalvik, S. (2013). Teachers' perceptions of the school goal structure: Relations with teachers' goal orientations, work engagement, and job satisfaction. *International Journal of Educational Research, 62,* 199-209. DOI: 10.1016/j.ijer.2013.09.004

 Soto-Perez, M., Sanchez-Garcıaand, J. Y., & Nunez-Rıos, J. E. (2020). Factors to improve job performance and school effectiveness. *International Journal of Educational Management, 34*(5), 805-822. DOI: 10.1108/IJEM-07-2019-0237

Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences*. Thousand Oaks, CA.: Sage Publication Inc.

Suriyankietkaew, S., & C. Avery, G. (2014). Employee satisfaction and sustainable leadership practices in Thai SMEs. *Journal of Global Responsibility, 5*(1), 160-173. DOI:10.1108/jgr-02-2014-0003

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research, 83*(3), 357-385. DOI:10.3102/0034654313483907

Toropova, A., Myrberg, E., & Johansson, S. (2020). Teacher job satisfaction: The importance of schoolworking conditions and teacher characteristics. *Educational Review, 73*(1), 71-97. DOI: 10.1080/00131911.2019.1705247

Wallace Foundation. (2013). *The school principal as leader: Guiding schools to better teaching and learning*. New York: Wallace Foundation. www.wallacefoundation.org

Wolomasi, A. K., Asaloei, S. I., Werang, B. R. (2019). Job satisfaction and performance of elementary school teachers. *International Journal of Evaluation and Research in Education* (IJERE), 8(4), 575-580. DOI: 10.11591/ijere.v8i4.20264

Wula, P., Yunarti, B. S., Wolomasi, A. K., Turu, D. W., Wulur, M. M., Krowin, M. M., Asaloei, S. I., & Werang, B. R. (2020). Job satisfaction and performance of elementary school teachers in Southern Papua, Indonesia. *Universal Journal of Educational Research 8*(7), 2907-2913. DOI: 10.13189/ujer.2020.080718

Yaakob, M. F. M., Don, Y., Sufi, I., & Yusof, M. R. (2020). Teachers' professional development level across cohort of generations in Malaysia. *International Journal of Instruction*, *13*(4), 443-456. https://doi.org/10.29333/iji.2020.13428a

Zhang, J., & Yuan, R. (2020). How can professional learning communities influence teachers' job satisfaction? A mixed-method study in China. *Teachers and Teaching,* 1-19. DOI:10.1080/13540602.2020.1806049