International Journal of Research in Education Humanities and Commerce

Volume 03, Issue 02 " March - April 2022"

ISSN 2583-0333

THE SUSTAINABLE LEADERSHIP FOR LEARNING AS PREDICTOR TO SCHOOL EFFECTIVENESS

MARNI ISHAK
Corresponding author,
School of Education,
Universiti Utara Malaysia.

FAUZI HUSSIN
Associate Professor,
School of Education,
Universiti Utara Malaysia.

ABSTRACT

The Sustainable Leadership for Learning Questionnaire (SLLQ) is a valid questionnaire to measure sustainable leadership for learning of the school principals. However, the lack of evidence in predictive validity criteria makes the questionnaire doubt to be used by researchers. Thus, this study analyses how far the SLLQ could be a valid questionnaire to predict school effectiveness. A cross-sectional survey design was utilized. A total of 193 teachers from primary schools in Kedah were selected randomly to participate in this study. The SLLQ and School Effectiveness Index (SEI) were used to measure sustainable leadership for learning of school principals and school effectiveness, respectively. Using SmartPLS 3.0, this study found that the SLLQ is a valid questionnaire to predict school effectiveness. This study has contributed to the leadership literature in the education sector in Malaysia. This study suggests that if researchers want to measure sustainable leadership for the learning of school principals, the SLLQ questionnaire can be used without hesitation.

Keywords: Primary schools, School effectiveness, School principals' leadership, Sustainable Leadership for Learning Questionnaire, SLLQ

1.0 INTRODUCTION

One of the agendas stated in Malaysia Education Blueprint 2013-2025 is to provide appropriate education to develop students at early stages (Ministry of Education Malaysia, 2013) as input for Malaysia 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 Ministry of Education emphasizes developing principals to become effective leaders due to many researchers claim that effective schools are influenced by the school principals (Leithwood, Harris, & Hopkins, 2019; Wallace Foundation, 2013; Wu, 2020). However, one question arises: What leadership styles of school principals significantly affect the school's effectiveness? Amongst the leadership styles that affect the school's effectiveness is sustainable leadership (Hargreaves, 2007) and leadership for learning (Hallinger, 2011).

2.0 LITERATURE REVIEW

Volume 03, Issue 02 " March - April 2022"

ISSN 2583-0333

2.1 Sustainable Leadership

According to Hargreaves (2007), sustainable leadership is an educational leadership that can develop, enhance, and sustain learning via shared beliefs, values, and visions. Further, Hargreaves (2007) pointed out seven principles of sustainable leadership in education: 1) Implementing lifelong learning and caring for others. 2) Maintain the valuable aspects of life. 3) Teachers are leaders. 4) Sharing knowledge and resources. 5) Promotes diversity and avoids standardization. 6) Develops human resources. 7) Learns from the past for a better future. Meanwhile, Cook (2014) listed down ten attributes of sustainable leadership of school principals, which are, 1) disseminating the school goals, 2) providing teachers with professional development programs, 3) involving teachers to participate in the decision-making process, 4) developing teachers to become leaders, 5) promoting positive school climate and culture, 6) leads by example, 7) practices two-way communication with others, 8) practices consensus among teachers, 9) encourage teachers to reflect on their teaching, and 10) encourages teachers to apply strategic problem-solving.

A study conducted by Okilwa and Barnett (2017) found four factors that related to sustainable success in academics: 1) High expectations, 2) distributed leadership, 3) collective responsibility for students' academic performance, and 4) data-driven decision-making. Meanwhile, Richmond-Cullen, Bauman, Ferrance, and Kunkel (2017) identified five themes related to academic performance sustainability. The themes were: 1) Establishing a caring learning community that provides all students with the necessary tools and guidance. 2) The existence of sharing strategies amongst teachers to overcome the problem teachers and students face in maintaining success. 3) Involves everyone in making the vital decision on the teaching and learning process. 4) Professional development programs encourage teachers and staff to become experts and leaders in their respective fields. 5) Teachers and the community work closely to achieve the school's vision.

Although sustainable leadership is a new theory, studies to test sustainable leadership as a predictor to criterion variables is encouraging. Iqbal and Ahmad (2020) revealed that sustainable leadership significantly affected the organization's sustainable performance. Sezgin-Nartgün, Limon, and Dilekçi (2020) reported that sustainable leadership was a significant predictor for teachers' school effectiveness and work effort. Earlier, Suriyankietkaew and Avery (2014) and Hyung-Woo (2017) found that sustainable leadership was a significant predictor of organizational effectiveness.

2.2 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, Swaffied, & Frost, 2009). For Hallinger (2011), leadership for learning is an extension of instructional leadership and involves actions such as; 1) focusing on learning, 2) creating an atmosphere for learning, 3) organizing discussions on teaching and learning, and 4) sharing leadership functions to teachers.

Many studies were done to identify the influence of leadership on learning. Javed (2012) conducted a study to explore the practicability and usefulness of leadership for learning in Pakistan schools. The research revealed that dialogue and reflection to establish a shared

Volume 03, Issue 02 " March - April 2022"

ISSN 2583-0333

vision was the most critical factor for school achievement. In another study, Paletta, Alivernini, and Manganelli (2017) identified a positive relationship between leadership and the process variables related to academic success even the school context was controlled.

2.3 Sustainable Leadership for Learning

Based on sustainable leadership theory and leadership for learning theory, Ishak and Hussin (2019) developed a standardized questionnaire to measure sustainable leadership for learning and named it Sustainable Leadership for Learning Questionnaire (SLLQ). According to Ishak and Hussin (2019) Sustainable Leadership for Learning Questionnaire consists of seven dimensions, namely; 1) Develop and disseminate vision and mission, 2) Promote climate for teaching and learning, 3) Building the capacity of teachers, 4) Caring and consideration for others, 5) Distribute leadership functions to others, 6) Role model and integrity, and 7) Focus on quality teaching and learning. The definition of SLLQ constructs of the questionnaire is in Table 1.

Table I Definitions of Dimensions of Sustainable Leadership for Learning Questionnaire (SLLQ)

Dimensions of SLLQ	Definition
1. Develop and disseminate vision and mission (SCV)	Principals with staff develop strategic plans collaboratively to achieve the vision sustainably and disseminate the school community's vision.
2. Promote climate for teaching and learning (CTL).	A sustainable conducive climate for learning and teaching includes: ensuring teaching and learning time is allocated, not disturbed by unnecessary things, providing sufficient resources, minimising student misbehaviour.
3. Building Capacity of Teachers (BCT)	Building teachers' capacity promotes, facilitates, assists, and provides teachers' competencies and professional growth opportunities.
4. Caring and Consideration for Others (CC)	Caring and consideration referred to assigning tasks based on the capabilities, giving constructive feedback, assisting, caring, and being approachable.
5. Distribute Leadership Functions to Others (DL)	Distribute leadership is referred to distributing the managerial or leadership functions to teachers to manage and lead their teams or departments.
6. Role Model and Integrity (RM)	Leaders as role model to teachers through displaying high integrity.
7. Focus on Quality Teaching and Learning (FQ)	Quality teaching and learning as the primary focus to ensure the achievement is maintained.

2.4 School Effectiveness

Researchers have made many efforts related to student academic achievement, which ultimately gave birth to the concept of school effectiveness since the release of the Coleman Report in 1966 (Davis & Thomas, 1989). Because of this focus, the researchers concentrate more on the factors correlated to academic effectiveness rather than process (Sammons, Hillman, & Mortimore, 1995). Recently, Reynolds, Lee, Turner, Bromhead, and Subasic (2017) still highlighted that academic achievement is the ultimate agenda in the education institution. That is why once the school is not achieving the target, the school is not considered as effective. Since students' academic achievement is the schools' ultimate goal, the researcher used this aspect to formulate and define the school effectiveness. Miskel et al. (1983, p. 55) defined school effectiveness as the "evaluation of a school's productivity, adaptability, and flexibility". Furthermore, Miskel, McDonald, and Bloom (1983) claimed that "effective schools produce outcomes in greater quantity and of better quality, are more flexible, and able to adapt in the face of the ever-changing needs of students and society" (Miskel et al., 1983, p. 55). In the latest version of the School Effectiveness Index, Hoy (2009) explained that school effectiveness is a judgment of the overall effectiveness of a school along five dimensions: quantity and quality of product, efficiency, adaptability, and flexibility.

Reviews of international evidence pointed out that the principal is a critical determinant in the quality of the teaching and learning process, affecting student outcomes (Day & Sammons, 2016). Leithwood et al. (2019) claimed that school leadership significantly affects the quality of teaching and learning and contributes to school performance. Al-Harthi and Al-Mahdy (2017) found that the school principal's leadership contributed to school effectiveness. Earlier, Wallace Foundations (2013) asserts that most educational improvement goals will be tough to achieve without influential leaders. Recently, Jalapang and Raman (2020) found that school leadership affects students' academic achievement. Smith (2016) and Wu (2020) concluded that the leadership styles of school principals do affect students' academic performance.

3.0 PROBLEM STATEMENT

In education institutions, the ultimate goal of the school institutions is an academic achievement (Reynolds et al., 2017), and the school principals as leaders are responsible for the performance of the schools (Bush, 2020; Bush & Middlewood, 2013; Chen, Cheng, & Sato, 2017; Cheng, 1994; Heck, 1992; Jacobson, 2011; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Mackey, 2016; Marks & Printy, 2003; Wallace Foundation, 2013). As school leaders, principals will perform their responsibilities as leaders based on what they deem appropriate for the academic achievement of their respective schools. In leading the school, some principals practice transformational leadership style, instructional, consideration, initiating structure, participatory and various other styles due to many leadership theories claimed that their leadership theories have a significant impact on the school performance (Bass & Avolio, 1994; Griffith, 2004; Hallinger & Murphy, 1985; Malloy & Leithwood, 2017). Nevertheless, what is the most effective leadership style that the school principal could apply to produce an effective school? Therefore, to overcome the issue, Ishak and Hussin (2019) developed a standardized questionnaire to measure sustainable

leadership for learning and named it the Sustainable Leadership for Learning Questionnaire (SLLQ).

After conducting content validity using exploratory factor analysis (EFA), the questionnaire can be considered valid to measure sustainable leadership for learning (Ishak & Hussin, 2019). However, the cycle of validation study is not completed yet because the questionnaire is not conducted predictive validation study. According to Becker, Klein, and Wetzels (2012), predictive validity needs to be tested before establishing a valid questionnaire. Hence, this study is conducted to test the Sustainable Leadership for Learning Questionnaire (SLLQ) as a predictor of the school effectiveness index as the criterion variable. In particular, the alternative hypothesis of this study is: Sustainable leadership for learning is a significant predictor of school effectiveness.

4.0 METHOD OF THE STUDY

4.1 Research Design

In achieving the goal of this study, a cross-sectional survey design was applied. Creswell (2012) mentioned that if the study aims to describe behaviors, practices, and attitudes in a large and scattered population with a quantitative approach, then a cross-sectional survey design that uses standardized questionnaires is appropriate. Therefore, this study uses a cross-sectional survey design to collect the data from many respondents.

4.2 Population and Sampling

This study consists of primary school teachers in Kedah who have taught for at least one year. Before the data were collected, the researchers sought permission from the Ministry of Education, the Department of Education, and the selected schools' principals. Upon receiving permission from the Ministry of Education and State Education Department to conduct this study, 250 questionnaires were sent to teachers randomly via a google form. A total of 206 or 82.4% sets of questionnaires were returned. However, 13 sets of questionnaires were discarded due to outliers and straight-lining scores, and only 193 questionnaires were usable to analyze. According to Hair, Hult, Ringle, and Sarstedt (2022), the number of sets of questionnaires in this study is adequate when using PLS-SEM.

4.3 Instrumentations

Two standardised questionnaires, namely the Sustainable Leadership for Learning Questionnaire (SLLQ) and School Effectiveness Index (SEI), were used to measure principals' leadership styles and school effectiveness, respectively. Sustainable Leadership for Learning Questionnaire (SLLQ) consists of seven dimensions and uses a five-point Likert-type scale format. Ishak and Hussin (2019) reported that the SLLQ was validated using exploratory factor analysis (EFA). All 53 items produced factor loading between 0.617 to 0.800 and extracted 61.81% variance. The School Effectiveness Index (SEI) modified and tested by Hoy (2009) was used to measure the school effectiveness. The SEI is an 8-item using a five-point Likert-type scale format. Hoy (2009) reported that SEI is a valid questionnaire. Before collecting actual data, a pilot test was conducted to measure the reliability of questionnaires. The pilot test results showed that the value of Cronbach's alpha

Volume 03, Issue 02 " March - April 2022"

ISSN 2583-0333

for every scale and dimension of the questionnaires was above 0.70, which is considered reliable as recommended by Nunnally and Bernstein (1994).

4.4 Data Analysis

For data analysis, this study used PLS-SEM analysis with SmartPLS 3.0 software by Ringle et al. (2015). PLS-SEM is practical for simultaneously analyzing the validity and reliability of measuring instruments and structural model evaluation and hypothesis testing (Hair et al., 2022). Data analysis of this study was performed according to the following stages: 1) Analysis of lower-order constructs of SLLQ or known as first-order analysis. 2) Analysis of higher-order construct of SLLQ or known as second-order analysis. Data were analyzed using this method because SLLQ is the primary construct with seven dimensions in it, and both are composed of reflective-reflective constructs (Sarstedt, Hair, Cheah, Becker, & Ringle, 2019).

In both stages of this analysis, the convergent and discriminant validity of the measuring instrument will be determined using outer indicator loadings, composite reliability (CR), and average variance extracted (AVE) for each construct. The minimum criteria set for the indicator loading is 0.708, CR is 0.70, and AVE is 0.50. Even so, for the indicator's loading, which only reaches 0.60, if the CR and AVE for its construct have reached the set minimum level, then the item is retained (Hair et al., 2022).

5.0 RESULTS

5.1 Descriptive Statistics

A total of 193 usable questionnaires were analyzed. Of the 193 participants, 43 (22.3%) teachers were male, and 150 (77.7%) were female, while 174 (90.2%) were graduate teachers and 19 (9.8%) were non-graduate teachers. The demographics data in this study is in line with the distribution of teachers' population in Kedah.

5.2 Assessment of Measurement and Structural Model

Before assessing the measurement model, this study conducted Harman's one-factor analysis to ensure no issue related to common-method variance. Podsakoff, MacKenzie, Lee, and Podsakoff (2003) mentioned that if the variance in Harman's one-factor analysis is less than 50.0%, then the issue of common-method variance does not exist. In this study, the variance achieved in Harman's one-factor analysis is 43.84%. Therefore, the data of this study is not a concern with common-method variance.

Given that the model of this study is reflective-reflective, two steps of measurement assessment is conducted; 1) lower-order or first-order, and 2) higher-order or second-order measurement analyses. SmartPLS 3.0 program developed by Ringle, Wende, and Becker (2015) was used to analyze convergent and discriminant validity of the measurement and structural models. The outer indicator loadings, the Composite Reliability (CR), and the Average Variance Extracted (AVE) were used to assess convergent validity. For outer indicator loadings, the threshold value is 0.708 or higher, CR is 0.70 or higher, and AVE

must be 0.50 or higher (Hair et al., 2022). Cross-loading, Fornell and Larcker, and HTMT criterion were used to assess discriminant validity.

5.2.1 Assessment of First Order Measurement Model

Figure 1 shows the first-order measurement model of the study, while Table 3 shows the convergent validity, Table 4, 5, 6, and 7 show the discriminant validity using Fornell and Larcker, cross-loadings, HTMT criterion, and HTMT inference, respectively.

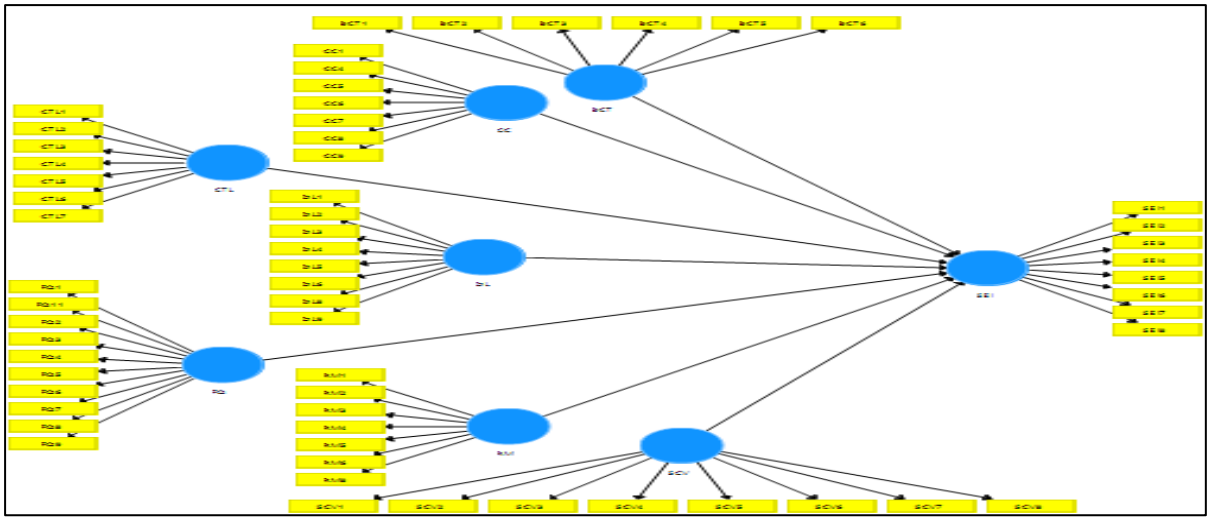

Figure 1. First-Order Measurement Model of the Study

Table 2 Convergent Validity of the First-Order Measurement Model

Construct	Items	Indicator Loadings	CR	AVE	Convergent Analysis?
BCT	BCT1	0.811	0.905	0.614	Yes
	BCT2	0.712			
	BCT3	0.834			
	BCT4	0.772			
	BCT5	0.767			
	BCT6	0.797			
CC	CC1	Omitted	0.899	0.641	Yes
	CC4	0.784			
	CC5	0.853			
	CC6	0.749			
	CC7	0.831			
	CC8	0.782			
	CC9	Omitted			
CTL	CTL1	0.735	0.885	0.562	Yes
	CTL2	0.734			
	CTL3	0.741			
	CTL4	0.780			

	CTL5	0.821			
	CTL6	0.681			
	CTL7	Omitted			
DL	DL1	Omitted	0.918	0.691	Yes
	DL2	Omitted			
	DL3	0.800			
	DL4	Omitted			
	DL5	0.826			
	DL6	0.809			
	DL8	0.857			
	DL9	0.862			
FQ	FQ1	Omitted	0.925	0.640	Yes
	FQ2	0.762			
	FQ3	0.850			
	FQ4	Omitted			
	FQ5	0.846			
	FQ6	0.802			
	FQ7	Omitted			
	FQ8	0.835			
	FQ9	0.815			
	FQ11	0.677			
RM	RM1	0.786	0.929	0.687	Yes
	RM2	0.811			
	RM3	0.778			
	RM4	Omitted			
	RM5	0.878			
	RM6	0.848			
	RM8	0.866			
SCV	SCV1	0.802	0.921	0.594	Yes
	SCV2	0.790			
	SCV3	0.687			
	SCV4	0.784			
	SCV5	0.738			
	SCV6	0.823			
	SCV7	0.784			
	SCV8	0.749			
SEI	SEI1	0.734	0.911	0.563	Yes
	SEI2	0.658			
	SEI3	0.759			
	SEI4	0.796			
	SEI5	0.791			
	SEI6	0.786			
	SEI7	0.722			
	SEI8	0.745			

Note: All factor loadings >0.600 (Hair et al. 2022).

Volume 03, Issue 02 " March - April 2022"

ISSN 2583-0333

All CR and AVE of the constructs are above threshold point, and significant at 0.001

Table 2 shows the outer indicator loadings for BCT (six items), CC (six items), CTL (six items), DL (five items), FQ (seven items), RM (six items) and SCV (eight items) is between 0.677 to 0.878. Three items, CTL6, FQ11, and SCV3, with indicator loading 0.681, 0.677, and 0.687, respectively, are less than threshold point 0.708. The CR of BCT, CC, CTL, DL, FQ, RM, and SCV is between 0.885 to 0.929, and AVE for those dimensions is between 0.562 to 0.691. Item CTL7 was deleted because of very low loading (0.394 <0.40). However, CTL6, FQ11, and SCV3 remained in the model because the CR and AVE of those dimensions achieved the threshold point. Another nine items, or 16.98%, were deleted in the model due to cross-loading of <0.1 (Chin, 1998). The items are CC1, CC9, DL1, DL2, DL4, FQ1, FQ4, FQ7, and RM4. Finally, 43 items of SLLQ were retained in the final model. Based on the statistics, it can be concluded that the convergent validity of SLLQ and its dimensions is achieved. Regarding SEI's convergent validity, all items have loadings higher than 0.708 except item SEI2 (0.658), while the value of CR and AVE of SEI is 0.911 and 0.563, respectively. Therefore, all items of SEI can be considered to fulfill the convergent validity criteria.

Table 3 Discriminant Validity of the First-Order Analysis Using Fornell and Larcker Criterion

	BCT	CC	CTL	DL	FQ	RM	SCV	SEI
BCT	**0.783**							
CC	0.726	**0.801**						
CTL	0.703	0.614	**0.750**					
DL	0.715	0.750	0.663	**0.831**				
FQ	0.764	0.745	0.730	0.787	**0.800**			
RM	0.679	0.733	0.679	0.736	0.765	**0.829**		
SCV	0.733	0.602	0.740	0.659	0.695	0.598	**0.770**	
SEI	0.535	0.538	0.545	0.548	0.606	0.531	0.460	**0.750**

Note: All √AVE square root values (diagonal) are larger than the correlation between constructs

Table 3 shows that the statistics of discriminant validity using the Fornell and Larker criterion is sufficient discriminant validity (Fornell & Larker, 1981). The value of the AVE square root (diagonal and bold) is larger than the correlation (off-diagonal) for reflective constructs.

Table 4 Discriminant Validity of First-Order Using HTMT Criterion

	BCT	CC	CTL	DL	FQ	RM	SCV	SEI
BCT								
CC	0.824							
CTL	0.810	0.719						
DL	0.805	0.858	0.762					
FQ	0.852	0.840	0.831	0.873				
RM	0.747	0.829	0.775	0.818	0.838			

SCV	0.809	0.674	0.843	0.726	0.760	0.654		
SEI	0.592	0.612	0.623	0.610	0.666	0.589	0.492	

Note: All HTMT criterion values <0.90 (Gold et al., 2001)

Table 4 shows that all values of the HTMT criterion are below 0.90. Gold, Malhotra, and Segars (2001) proposed that if the value of the HTMT criterion is below 0.90, it can be considered as fulfilling the discriminant validity criteria.

5.2.2 Assessment of Second-Order Measurement Model

Figure 2 shows the second-order measurement and structural model of the study. In the second-order assessment model, convergent and discriminant validity criteria are used, as shown in Tables 5, 6, and 7.

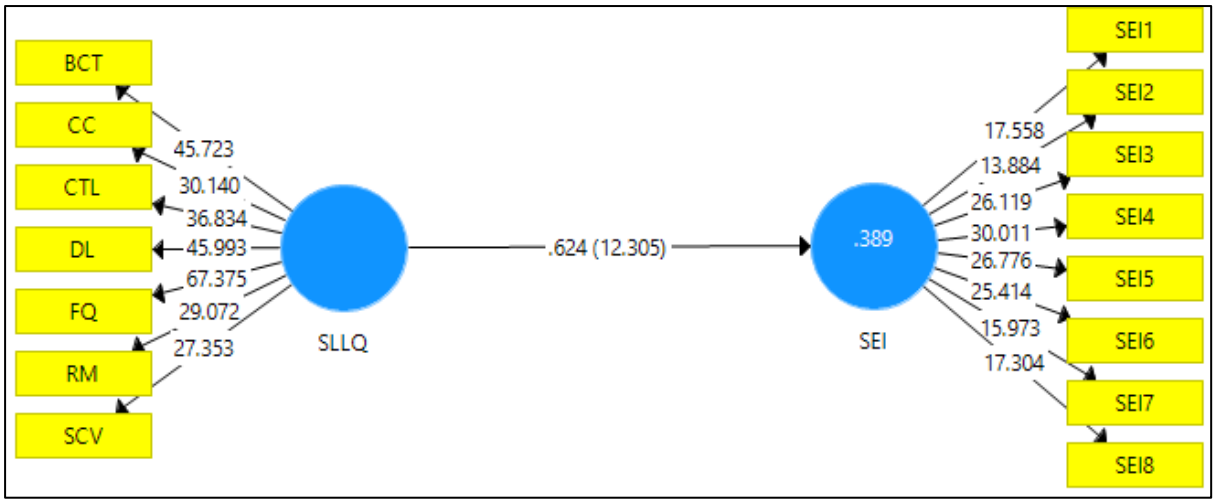

Figure 2. Second-Order Measurement and Structural Model

Table 5 Convergent Validity of Second-Order Measurement Model

Construct	Dimensions	Outer Indicator Loadings	CR	AVE	Convergent Analysis?
SLLQ (HOC)	BCT	0.878	0.954	0.748	Yes
	CC	0.856			
	CTL	0.846			
	DL	0.879			
	FQ	0.911			
	RM	0.859			
	SCV	0.822			

Note: All factor loadings >0.708 (Hair et al. 2022).

All CR and AVE of the constructs are above threshold point (0.70 & 0.50), and significant at 0.001

Table 5 shows that all outer indicator loadings for dimensions of the SLLQ construct are above the threshold point 0.708, while CR with 0.954 and AVE with 0.748, which are beyond threshold points 0.70 and 0.50, respectively. It means the SLLQ (HOC) achieved the convergent validity criteria (Hair et al., 2022).

Table 6 Discriminant Validity of Second-Order Measurement Model Using Fornell and Larcker Criterion

	SLLQ	SEI
SLLQ	**0.865**	
SEI	0.624	**0.75**

Note: All √AVE square root values (diagonal) are larger than the correlation between constructs

Table 7 Discriminant Validity of Second-Order Measurement Model Using HTMT Criterion

	SLLQ	SEI
SLLQ		
SEI	0.674	

Note: Value of HTMT less than 0.85 (Kline, 2005)

As shown in Table 6 and Table 7, the measurement model of this study achieved the discriminant validity using Fornell and Larcker (1981) and HTMT (Kline, 2005) criterion. Based on convergent and discriminant validity criteria, it can be concluded that the SLLQ model is valid and reliable.

5.2.3 Results of Structural Model Assessment and Hypothesis Testing

Table 8 shows the results of hypothesis testing. Table 8 shows that the index of lateral collinearity based on inner variance inflator factor (VIF) is 1.000, which is below 3, and it can be interpreted as not a concern with collinearity. Hair et al. (2022) mentioned that if the VIF index is less than three, there is no collinearity.

Table 8 Results of Hypothesis Testing

Hypothesis	Relationship	Std Beta	Std Dev.	t-value	p	Decision	R^2 Adjusted	f^2	Q^2	Inner VIF
H_A	SLLQ→ SEI	0.624	0.051	12.305	0.001	Supported	0.386	0.637	0.213	1.000

Based on the statistics in Table 8, this study found that the Sustainable Leadership for Learning Questionnaire (SLLQ) is a significant predictor to school effectiveness (SEI) (β = 0.624, R2 Adjusted= 0.386, t = 12.305, p = 0.001) which SLLQ explains 38.6% of variances

in school effectiveness (SEI). The adjusted R2 value of 0.386 is above the 0.26 value, which indicates a substantial model (Cohen, 1988). The value of f2 is 0.637, which is according to Cohen (1988) if the value of f2 is above 0.35; the effect size is substantial with a large effect on SEI. Therefore, the hypothesis that the SLLQ is a significant predictor of SEI is supported. In addition, the blindfolding procedure was performed to test the predictive relevance of the model. Based on the results of blindfolding, the value of Q2 is 0.213, which is larger than 0, and it can be interpreted that SLLQ has predictive relevance to SEI (Hair et al., 2022). Thus, it can be concluded that the SLLQ is a valid instrument to predict school effectiveness and fulfill the predictive validity criteria.

6.0 DISCUSSION

Based on the convergent and discriminant validity of the first-order (lower-order) measurement model, the SLLQ can be considered a valid and reliable questionnaire to measure sustainable leadership for learning. This claim arises because based on statistical tests using SmartPLS 3.0, it shows that the convergent and discriminant validity meet the criteria set by Hair et al. (2022), Fornell and Larker (1981), Chin (1988), Gold et al. (2001), Kline (2005), and Henseler et al. (2015). Outer indicator loadings for each item in the SLLQ lower-order analysis are above 0.708, except for three items, CTL6, FQ11, and SCV3, with 0.681, 0.677, and 0.687, respectively. Although the indicator loadings are less than 0.708 since the AVE of the respective constructs achieved 0.50, the item can be retained in the model (Hair et al., 2022). It means the SLLQ lower-order measurement model meets the criteria of convergent validity.

In addition to convergent validity, this study also evaluates the measurement model using discriminant validity using Fornell and Larker's (1981) criteria, Chin's (1998) cross-loading criteria, and HTMT criteria Henseler et al. (2015). The study indicates that the SLLQ questionnaire has reached the minimum level of the Fornell and Larcker (1981) criteria, where no correlation value is higher than the AVE square. After deleting nine items due to cross-loading smaller than 0.1, it was found that there is no more cross-loading value smaller than 0.1. Chin (1998) stated that if a cross-loading value is smaller than 0.1, the item should be dropped, but not more than 20%. Furthermore, the questionnaire was also evaluated using the HTMT criterion (Henseler, 2015). The results found that all HTMT criterion values were below 0.90. Gold et al. (2001) stated that if the HTMT criterion value is below 0.90, it means that the discriminant validity of the construct in a questionnaire is acceptable. Besides, when bootstrapping was performed, it was found that the HTMT inference value was below the value of 1. According to Henseler et al. (2015), if the HTMT inference value is below the value of 1, it means that the discriminant validity criteria have been met.

Besides, after conducting second-order analysis, it confirmed that the SLLQ questionnaire is valid and reliable. All loadings for SLLQ dimensions are above threshold point 0.708, while CR and AVE for SLLQ (HOC) are 0.954 and 0.78, above threshold points 0.70 and 0.50, respectively. When the SLLQ (HOC) is evaluated with discriminant validity, it can be concluded that the SLLQ (HOC) has met the discriminant validity either using Fornell and Larcker's criteria or HTMT criteria.

With regard to study's hypothesis: SLLQ is a significant predictor to school effectiveness, the statistics in Table 8 showed that $\beta = 0.624$, R2 Adjusted = 0.386, $t = 12.305$, $p = 0.001$; which

Volume 03, Issue 02 " March - April 2022"

ISSN 2583-0333

SLLQ explains 38.6% of variances in school effectiveness (SEI). When evaluated with the value of Q2, it is found that the value of Q2 = 0.213, which is larger than 0. According to Hair et al. (2022), if the value of Q2 is larger than 0, the model has predictive relevance for SEI. Hence, it can be concluded that the SLLQ is a significant predictor of SEI and fulfill the predictive validity criteria.

The study result is in line with leadership theories stating that leadership style significantly influences organizational effectiveness (Bass & Bass, 2008; Day & Sammons, 2016; Leithwood et al., 2019; Yukl & Gardner, 2020). The findings are also in line with the findings of the study conducted by Al-Harthi and Al-Mahdy (2017), Hyung-Woo (2017), Iqbal and Ahmad (2020), Jalapang et al. (2020), Okilwa and Barnett (2017), Paletta et al. (2017), Richmond-Cullen et al. (2017), Sezgin-Nartgün et al. (2020), Smith (2016), Suriyankietkaew and Avery (2014), and Wu (2020) who found that the leadership styles of school principals have a significant influence on school effectiveness.

This situation occurs because when a principal who is also a school leader sets a clear direction with the teachers, the teachers will feel that the vision and mission are theirs and it will cause the teachers to perform their duties with more commitment, ultimately leading to school effectiveness (Hargreaves, 2007). In addition, this situation also occurs because when a school leader focuses on the quality of teaching, then teachers will always look for teaching methods that are proven to be effective (Hallinger, 2011; MacBeath et al., 2009). Furthermore, when principal practices distributed leadership to teachers, which is a dimension in SLLQ, it causes teachers to feel the school agenda is theirs. When teachers feel the agendas are theirs, it causes teachers to focus more on school achievement goals. Harris (2008) states that when teachers are given leadership responsibilities, they become more responsible and, in turn, will perform tasks beyond expectations. Other than that, building teacher capacity, which is also one of the dimensions of SLLQ, causes teachers to become more competent, and in turn, teaching becomes more effective and, at the same time, will increase the effectiveness of the school (Hallinger, 2011).

Apart from that, in SLLQ, the climate for teaching and learning is one of the dimensions. Actions to provide a suitable climate for teaching and learning will enable teachers and students to focus entirely on their respective agendas as there will be no more disruption to the teaching and learning process. As a result, the school will be effective (Hallinger, 2011; MacBeath et al., 2009). In addition, SLLQ can also be a predictor of school effectiveness because, in SLLQ, there is an element of caring and consideration. This element is crucial to subordinates as it causes subordinates to be happy during work and, in turn, increases the commitment to work hard, and in consequence, the school achieves effectiveness. Hoy and Miskel (1991) stated that a happy worker is productive.

Furthermore, SLLQ can also be a predictor of school effectiveness because, in SLLQ, there is a role model element. This element is vital because subordinates are not worried about physiological and safety needs. Whenever the basic needs are met, it will cause subordinates to be happy to work, and in turn, subordinates will work with double effort. Bass and Riggio (2006) stated that subordinates would work extra effort if organizational leaders could provide basic needs. This kind of effort affects the effectiveness of the school.

In sum, based on convergent and discriminant validity and structural assessment data above, it can be concluded that SLLQ is a valid questionnaire and can predict school effectiveness. Therefore, researchers who want to conduct studies to predict the factors contributing to school effectiveness suggest that researchers use the SLLQ.

7.0 LIMITATION AND RECOMMENDATIONS FOR FUTURE STUDY

This study was conducted with the primary aim to validate the SLLQ using predictive validity criteria. Therefore, this study was conducted within some limitations and, firstly, related to the study sample. This study is limited to teachers who served the national primary school in Kedah. Therefore, the results of the study cannot be generalized to the National Secondary School and National Type Primary Schools. Hence future study is needed to be conducted in other school settings.

Secondly, the data analysis of this study is confined to SmartPLS 3.0, and no other statistical analysis was used. Therefore, the result of the study may differ from this study if the researcher uses other statistical analyses such as SEM-AMOS or stepwise regression analysis. Hence, this study suggests conducting a further study using covariance-based analysis such as Structural Equation Modeling-AMOS to confirm the model. Hair et al. (2010) recommended that the researcher use SEM-AMOS if someone wants to confirm the study's model.

Thirdly, the only criterion variable used to test the predictive validity of the SLLQ in this study is school effectiveness. Therefore, future research is needed to be conducted to test the SLLQ as a predictor with other criterion variables such as teachers' commitment, teachers' organizational citizenship behavior, teachers' motivation towards teaching, teachers' job satisfaction and school climate.

Lastly, this study suggests a study to test the concurrent validity of the Sustainable Leadership for Learning Questionnaire (SLLQ). Among the questionnaires that can be utilized to conduct concurrent validity are the Attributes of School Leaders towards Achieving Sustainable Leadership by Goolamally and Ahmad (2014) and The Principal Change Leadership Competency Scale (PCLCS) by Kin et al. (2014).

8.0 CONCLUSION

The result of the study is encouraging, but it must be interpreted cautiously, and no definite conclusion can be drawn to the finding of this study except the Sustainable Leadership for Learning Questionnaire (SLLQ) is a valid questionnaire to measure sustainable leadership for learning and to predict school effectiveness. More importantly, this study has contributed to the development of leadership literature in the context of the education sector in Malaysia. Finally, this study suggests that if researchers want to measure sustainable leadership for the learning of school principals, the SLLQ questionnaire can be used without hesitation.

9.0 ACKNOWLEDGEMENT

This paper is a section of the first author's doctoral thesis at Universiti Utara Malaysia under the supervision of the second author.

REFERENCES

Al-Harthi, A. S. A., & Al-Mahdy, Y. F. H. (2017). Distributed leadership and school effectiveness in Egypt and Oman: An exploratory study. International Journal of Educational Management, 31(6), 801–813. doi:10.1108/item-05-2016-0132

Bass, B. M. (1985). Leadership and performance beyond expectations. New York: The Free Press.

Bass, B. M., & Avolio, B. J. (1994). Improving organizational effectiveness through transformational leadership. Thousand Oaks, CA: Sage.

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. (2006). 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

Bush, T., & Middlewood, D. (2013). Leading and managing people in education. London: Sage Publications.

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

Cheng, Y.-C. (1994). Principal's leadership as a critical factor for school performance: evidence from multi-levels of primary schools. School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice, 5(3), pp. 299-317, DOI: 10.1080/0924345940050306

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.

Cook, J. W. (2014). Sustainable school leadership: The teachers' perspective. NCPEA International Journal of Educational Leadership Preparation, 9(1), March.

Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. (4th Ed.). Boston: Pearson.

Davis, G. A., & Thomas, M. A. (1989). Effective schools and effective teachers. Boston: Allyn and Bacon.

Day, C., & Sammons, P. (2016). Successful school leadership. Reading: Education Development Trust.

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/10.2307/315131

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabalities perspective. Journal of Management, 18(1), 185-214. http://doi.org/10.1080/07421222.2001.11045669

Goolamally, N., & Ahmad, J. (2014). Attributes of School Leaders towards Achieving Sustainable Leadership: A Factor Analysis. Journal of Education and Learning, 3(1). Pp. 122-133. doi:10.5539/jel.v3n1p122

Griffith, J. (2004). Relation of principal transformational leadership to school staff job satisfaction, staff turnover, and school performance. Journal of Educational Administration, 42(3), 333-356. Retrieved March 30, 2010, from ProQuest Education Journals.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). Multivariate data analysis. (7th ed.). New Jersey: Pearson Education, Inc.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). A primer on partial least squares structural equation modelling. London: SAGE.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). A primer partial least squares structural equation modelling (PLS-SEM) (3rd Ed.). 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

Hallinger, P., & Murphy, J. (1985). Assessing the instructional management behavior of principles. The Elementary School Journal, 86(2), 217-247. http://dx.doi.org/10.1086/461445

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

Harris, A. (2008). Distributed school leadership: Developing tomorrow's leaders. London: Routledge.

Heck, R. H. (1992). Principals' instructional leadership and school performance: Implications for policy development. Educational Evaluation and Policy Analysis, 14(1), 21-34. doi:10.2307/1164525

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

Hoy, W. (2009). School Effectiveness Index (SE-Index). Retrieved 2nd January 2019. https://www.waynekhoy.com/school-effectiveness/

Hoy, W. K., Miskel, C. G., & Tarter, C. J. (1991). Educational administration: Theory, research, and practice (4th ed.). New York: McGraw-Hill Companies, Inc.

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. & Noor Hazlina Ahmad, N. H. (2020). Sustainable development: The colors of sustainable leadership in learning organization. Sustainable Development. 2020;1–12.DOI: 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, pp. 57-60. Pertubuhan Penyelidikan dan Pendidikan Pendidik Malaysia: Bandar Baru Bangi.

Jacobson, S. (2011). Leadership effects on student achievement and sustained school success. International Journal of Educational Management, 25(1), pp. 33-44. DOI 10.1108/09513541111100107

Jalapang, I., & Raman, A. (2020). Effect of instructional leadership, principal efficacy, teacher efficacy and school climate on students' academic achievements. Academic Journal of Interdisciplinary Studies, 9(3), 82-92. Doi: 10.36941/ajis-2020-0043

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.

Kin, T. M., Kareem, O. A., Nordin, M. S., & Bing, K. W. (2014). The development of a principal change leadership competency model: A structural equation modelling (SEM) approach. ISEA, 42(2), pp. 3 – 42.

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. (6th. Edition). New Jersey: John Wiley & Sons, Inc

Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). How leadership influences student learning. The Wallace Foundation.

Leithwood, K., Harris, A. & Hopkins, D. (2019). Seven strong claims about successful school leadership revisited. School Leadership & Management. DOI: 10.1080/13632434.2019.1596077

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

Mackey, K. H. (2016). The relationships among instructional leadership, school culture, and student achievement in Kentucky elementary schools. Dissertations. Paper 110, Western Kentucky University. http://digitalcommons.wku.edu/diss/110

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

Malloy, J., & Leithwood, K. (2017). Effects of Distributed Leadership on School Academic Press and Student Achievement. In K. Leithwood et al. (eds.), How School Leaders Contribute to Student Success, 69–91. doi:10.1007/978-3-319-50980-8_5

Marks, H., & Printy, S. (2003). Principal leadership and school performance: An intergration of transformational and instructional leadership. Educational Administration Quarterly, 39, 370-397.

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

Miskel, C., McDonald, D., & Bloom, S. (1983). Structural and expectancy linkages within schools and organizational effectiveness. Educational Administration Quarterly, 19, 49-82.

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

Okilwa, N., & Barnett, B. (2017). Sustaining school improvement in a high-need school: Longitudinal analysis of Robbins Elementary School (USA) from 1993 to 2015. Journal of Educational Administration, 55(3), pp. 297-315. https://doi.org.eserv.uum.edu.my/10.1108/JEA-03-2016-0034

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

Podsakoff, P. M., MacKenzie, S. B., Lee, J-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(50, pp. 879–903.

Reynolds, K. J., Lee, E., Turner, I., Bromhead, D., & Subasic, E. (2017). How does school climate impact academic achievement? An examination of social identity processes. School Psychology International, 38(1), 78–97. doi: 10.1177/0143034316682295

Richmond-Cullen, C. Bauman, D., Ferrance, V. A., & Kunkel, S. (2017). The sustainability of inclusionary practices: A case study. International Journal of Learning, Teaching and Educational Research, 16(5), pp. 1-13.

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

Sammons, P., Hillman, J. & Mortimore, P. (1995). Key characteristics of effective schools: A review of school effectiveness research. London: Office for Standards in Education [OFSTED].

Sarstedt, M., Hair, J. F. Jr., Cheah, J-H., Becker, J-M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM, Australasian Marketing Journal, 27(3), pp. 197-211. https://doi.org/10.1016/j.ausmj.2019.05.003

Sezgin-Nartgün, S., Limon, I., & Dilekçi, U. (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.

Smith, B. S. (2016). The role of leadership style in creating a great school. SELU Research Review Journal, 1(1), 65–78.

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

Tai Mei Kin, Omar Abdull Kareem, Mohamad Sahari Nordin, & Khuan Wai Bing. (2014). The development of a principal change leadership competency model: A structural equation modelling (SEM) approach. International Studies in Educational Administration (ISEA), 42(2), 3-42.

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

Wu, H. (2020). The effect of principal leadership on student achievement: A multivariate meta-analysis. Dissertations, 3630, Western Michigan University. https://scholarworks.wmich.edu/dissertations/3630

Yukl, G., & Gardner III, W. L. (2020). Leadership in organizations (9th ed.). Harlow, England: Pearson.

