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A Confirmatory Factor Analysis of Developing a High-Performance Primary School Model in the Northeast Region of Thailand

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Abstract

This study intended to explore the factors and indicators of high-performing administration for primary school in the northeast region of Thailand. The researchers employed a mixed-mode design. They conceptualized high-performing primary school administrative factors and indicators by analyzing documents and past studies, followed by a survey of 400 respondents with the purpose of testing the goodness of fit of the identified factors and indicators of high-performing primary school with the empirical data. The results discovered a total of 15 indicators resulting from the five factors in a high-performing primary school model and they were found parallel to the empirical data.

Keywords: *Culture Of Continuous Improvement, Factors, High-Performing Primary School Model, Indicators, Innovative Practices.*

INTRODUCTION

High-performing primary schools often share a set of characteristics and practices that contribute to their success. Therefore, an effective educational leadership and efficient management strategies are very important to ensure the effectiveness of learning is taking place in terms of students' performance and achievement (Azar & Adnan, 2020). According to Abdul Hamid et al. (2023), a supportive environment consists of positive culture and parental involvement can create culture of continuous improvement. For example, a supportive and inclusive school culture that fosters respect, collaboration, and a growth mindset can promote high-performing primary school administration. Besides, active parental and community involvement in school activities as well as decision-making processes (Abdul Hamid et al., 2023).

Innovative practices are one of vital factors to fostering an environment of excellence and continuous improvement (Akpan, 2016). According to Akpan (2016), the injection of innovations into school administration is in response to the technological development resulting in creative and innovative practices all over the globe. Therefore, innovation is the economic application of ideas, technology, and processes in new ways to gain competitive advantage which could be in form of improved productivity, job performance, services, and commitment. In short, innovative practices can be adopted or adapted as a process in which new practices are put in place or injection into operation of an administrative system to replace ineffective ones. School and community participation is another critical factor in fostering a high-performing primary school. Nishimura (2017) emphasized the importance of active involvement from both the school and the broader community in enhancing student learning, improve school climate, and build a supportive environment for high-performing school administration. In other words, community participation in primary school administration has great potentials for removing mistrust and distance between people and schools by nurturing transparency of information and a culture of mutual respect and by jointly pursuing improvement of school by sharing vision, process, and results (Nishimura, 2017).

A high focus on academic achievement is central to the success of high-performing primary schools (Moore, 2019). This focus involves setting high expectations, providing rigorous and engaging instruction, and offering comprehensive support systems to ensure all students achieve their full potential (Moore, 2019). School

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administrators establish and communicate clear, high academic standards and learning goals for all students. This is followed by teachers implement a challenging and comprehensive curriculum that pushes students to excel and think critically as challenging curriculum. Effective leadership is the final crucial factor for the success of high-performing primary schools (Sanchez & Watson, 2021). Sanchez and Watson (2021) explained that strong leaders set the vision, create a positive school culture, and ensure that all aspects of the school are aligned with the goal of high academic achievement. As a result, effective school administrators can create an environment that supports high academic achievement and foster continuous improvement, ensuring that their primary schools are high-performing and successful. Based on the above literature review, this study objects to develop a high-performing primary school administrative model in Thailand. By creating a structural equation model for high-performing primary school administration can provide valuable insights into these factors that can create a robust framework for a high-performing primary school, ensuring students receive the quality education they need to succeed.

MATERIALS AND METHODS

Research Design

The researchers employed a mixed mode research design in this study combining expert interviews, document analysis, and a questionnaire survey to gain a comprehensive understanding of the research problems due to this robust approach (Creswell & Creswell, 2022). The surveys could provide quantitative data on school administrators and teachers' perceptions on factors and indicators that affecting high-performing primary school administration while document analysis and expert interviews could offer deeper insights to conceptualize factors and their indicators in promoting high-performing primary school administrative model. The researchers found that mixed mode methods are valuable in this study because they can enhance the validity and reliability of study results by triangulating data from different sources. Besides, they allow researchers to explore complex research questions that may not be fully captured by a single data collection method (Creswell & Creswell, 2022).

In the first phase, the researchers conceptualized factors and indicators of high-performing primary school administration. This was followed by conducting a survey to test the structural construction between experimental examination and the hypothetical theory of quantitative relationships concerning experimental data in the final phase. The relationships are epitomized by path coefficients or deterioration between the high-performing primary school administrative factors and their indicators. Figure 1 exhibits the research process.

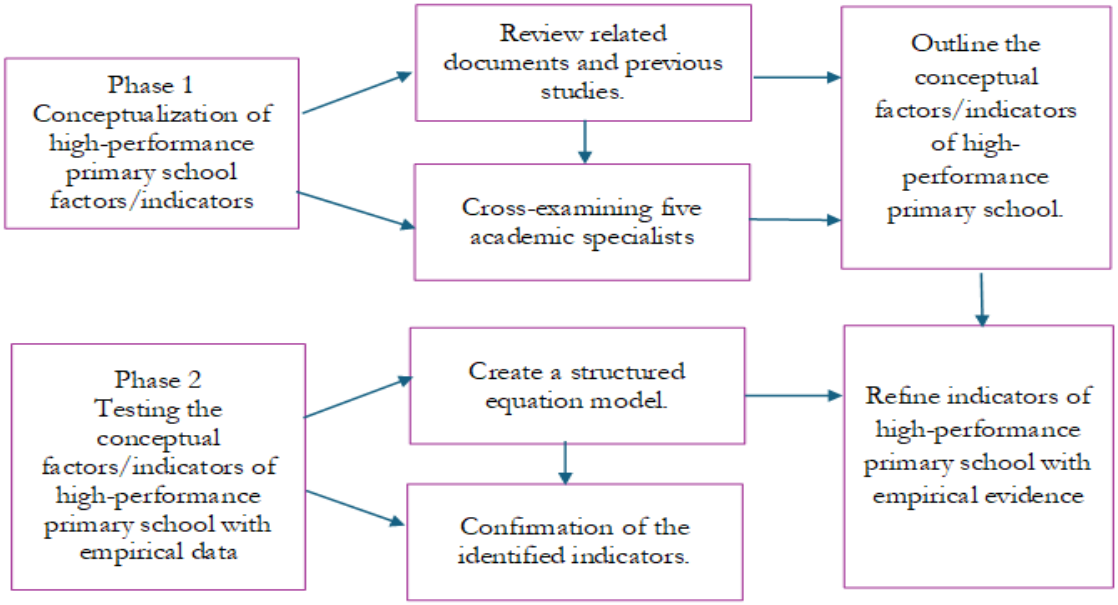

Figure 1. Research Framework.

Population and Sampling

In the first phase, the researchers utilized a purposive sampling technique because it is an effective method for selecting a small, targeted group of five academic experts. The researchers chose purposive sampling as it is an effective technique to ensure that these five experts have specific knowledge and experience relevant to validate the identified factors and indicators derived from reviewing documents and related past studies. They participated in the face-to-face interview so that researchers could reach a complete interpretation of the fundamental underlying principles, attributes, and achievements behind numerous measures to reflect the factors and indicators of the high-performing primary school administration. After completing the first phase, researchers categorized and verified factors and indicators to form a structured equation model.

In. the final phase, a multi-stage sampling was employed due to this sampling is useful technique when dealing with large populations spread across various provinces in northeast region of Thailand. The multi-stage sampling involves selecting samples in multiple stages, often moving from larger to smaller units (Gay et al., 2009). The researchers started selecting clusters, which in this case are primary schools in northeast region with a total of 11,639 schools. Then, the researchers used stratified random sampling to ensure representation across different sizes of schools, e.g., small, median, large, and extra-large. Within each stratum, select a random sample of 10 schools. In the second stage, the selection of participants consisted of 10 school administrators and 10 teachers. The researchers automatically included one principal and randomly selected one teacher at each selected school.

The researchers employed the rule of thumb proposed by Becker and Ismail (2016) to formulate an adequate sample size (N). The identified sample size is recognized as the presence of classified practice in reaching an adequate probability for the requisite results such as model convergence, statistical precision, and statistical power for confirmatory factor analysis (CFA) with empirical data. This was followed by determining the ratio of parameter and samples as 20:1 to fulfill the sample criteria (Hair et al., 2013). A total of 400 respondents consisting of 178 school administrators and 222 teachers. as required sample size. The survey was driven to assess the factors and indicators of the high-performing primary school administrative model. Table 1 presents the distribution of the population and sample group.

Table 1. Distribution of Population and Sample Groups.

Province	Number of schools	Population		Samples		Total
		Adminis-trator	Teacher	Adminis-trator	Teacher	
Kalasin	536	466	3985	10	10	20
Khon Kaen	909	842	7414	10	10	20
Chaiyaphum	675	580	4746	10	10	20
Nakhon Phanom	266	386	3358	10	10	20
Nakhon Ratchasima	1296	1186	12733	10	10	20
Bueng Kan	212	241	2100	10	10	20
Buriram	643	701	6646	10	10	20
Mahasarakham	500	472	3488	10	10	20
Mukdahan	246	212	1971	10	10	20
Yasothon	370	346	2662	10	10	20
Roi Et	770	677	5773	10	10	20
Loei	398	398	3635	10	10	20
Sisaket	842	842	9144	10	10	20
Sakon Nakhon	610	610	8395	10	10	20
Surin	743	753	7422	10	10	20
Nong Khai	260	249	1840	10	10	20
Nong Bua Lamphu	303	293	2674	10	10	20
Amnat Charoen	252	255	1719	10	10	20
Udon Thani	755	744	7651	10	10	20
Ubon Ratchathani	1053	936	8888	10	10	20
Total	11,639	11,189	104,055	200	200	400

Research Procedures

The researchers determined the types of documents to be analyzed, such as academic research articles, government reports, case studies and educational framework to address the subject of high-performing primary school administration within their selected scope. The determination of factors and indicators for high-

performing primary school administration as a specialized concentrate of their document analysis. This was followed by developing a coding framework through identification broad categories for factors and indicators, such as school leadership, teacher quality, student engagement, curriculum, and resources. Hence, the researchers further defined these categories into specific indicators, e.g., instructional strategies, professional development, parental involvement and so on. Then, the researchers consulted with academic experts to validate the results and compared documental analysis results across expert interviews to ensure consistency, so-called cross-validation (Gay et al., 2009).

In the final phase, the researchers conducted a survey mainly to investigate the relationships between variables and test the theoretical high-performing primary school administrative model. After the researchers conceptualized the model, they developed a theoretical framework that represents the factors and indicators of high-performing primary school administration based on the existing literature from the first phase. Then, the researchers defined the latent constructs (factors) and their corresponding observed indicators (refer to Figure 1). Quantitative data on the variables included in the model were collected using a questionnaire in order to capture information related to high-performing primary school administration. This was to ensure that the data collected would be aligned with the identified factors and indicators.

Finally, the researchers constructed an assessment model that specifies the relationships between the latent constructs and their observed indicators. This step was used to ensure the selected indicators adequately measure their corresponding factors. Once the assessment model was established, the researchers specified the relationships between the latent constructs. In other words, the researchers determined the relationships between the factors based on the theoretical framework. The structural model represents the causal relationships between the factors of high-performing primary school administration (Hair et al., 2013).

Research Instrument

The researchers utilized two forms of instruments, namely interview questions protocol and closed ended questionnaire as two sources of data collection. The five experts in the first phase were requested to respond to the six open questions which permitted them to express their thoughts interpreting the identified factors and indicators. The researchers sought to gather extensive remarks from the five experts by using open questions which seemed to be functioned better in enabling them to intricate their remarks in detail.

In the final phase, the researchers applied an online survey questionnaire consisting of 33 closed questions as a manner to assemble quantitative data. The closed question structure was engaged by controlling responses that fit into pre-determined sets of factors and indicators from the results of the first phase. A continuous five-point Likert scale was used to evaluate the strength of perception. This questionnaire was comprised of six sections and anticipated to collect information relating to respondents' perceptions of high-performing primary school administration. Section A collects respondents' demographic backgrounds, namely gender, age, working experience, highest academic degree, position, their school size, and when their schools were certified by National Education Standards and Quality Assessment (ONESQA). Section B to F was specifically designed to gauge data about high-performing primary school administration (33 items) consisted of five factors, namely culture of continuous improvement (seven items), innovative practices (six items), school and community participation (seven items), high focus on academic achievement (seven items), and effective leadership (six items) with a total of 33 items.

Data Analysis

Qualitative data either from document analysis or experts' interviews were analyzed using content analysis (Gay et al., 2009). On the other hand, Structural Equation Modelling (SEM) was utilized to analyze quantitative data. The SEM is an appropriate method to analyze the structural relationship between measured variables and latent constructs because it syndicates factor loading examination and path analysis or multiple regression examination (Gay et al., 2009). On top of that, SEM could estimate the multiple and interrelated dependence in a single analysis, namely endogenous and exogenous variables. In this study, the endogenous variable refers to the high-performing primary school administration and exogenous variables were the conceptualized factors and

indicators from the first phase. Consequently, the researchers applied SEM to measure how accurately a hypothetical model fits empirical data to examine the structural equation model. The structural equation model indicates the hypothesis on how identified factors and indicators combine in corresponding to the hypothesis. Hence, the researchers applied to a CFA to test the structural equation model for its goodness of fit.

Goodness of fit used to test how well a statistical model or hypothesis fits the observed data. It is a measure used in this study to assess the adequacy of a model in explaining the data it was designed to analyze (McDonald & Ho, 2002). Therefore, goodness of fit tests includes χ^2 (Chi-Square), df (Degrees of Freedom), χ^2 /df, CFI (Comparative Fit Index), TLI (Tucker Lewis Index), RMSEA (Root Mean Square Error of Approximation), and SRMR (Standardized Root Mean Square Residual). The goodness of fit tests is employed to verify if a sample of data fits a particular distribution. χ^2 is a measure of how well the observed data fit the model. A lower χ^2 value indicates better fit but it is influenced by sample size, so it is often interpreted alongside other fit indices. While df indicates the number of free parameters estimated in the model, it is used in calculating the χ^2 /df ratio, which helps to assess model fit. In short, the χ^2 /df ratio provides a normalized measure of model fit, where a value closer to 1 indicates a better fit. Both CFI and TLI tests are used to compare the fit of the hypothesized model with that of a baseline model (usually a null model) hence values closer to 1 (ideally above 0.95) indicate a good fit. Conversely, RMSEA measures the discrepancy between the model implied covariance matrix and the observed covariance matrix thus values below 0.08 (sometimes 0.05) suggest a good fit. Finally, SRMR assesses the average discrepancy between the observed and predicted correlations. This means that lower values (ideally below 0.08) indicate better fit.

RESULTS AND DISCUSSION

The results of this study are performed in agreement with the study objective specified above. The initial results are the vital factors and indicators according to the conceptualization of high-performing primary school administration. Then, the researchers continued to measure the validity of the observable variables using factor loading to examine the goodness of fit of the high-performing primary school administration factors and indicators with the empirical data.

Identification of Factors and Indicators for High-Performing Primary School Administration

The results from documental investigation of prior studies, theories, and concepts accumulating with five experts' interviews revealed that there are five vital factors of high-performing primary school administration: (i) Culture of continuous improvement (CCI); (ii) innovative practices (IP), (iii) school and community participation (SCP), (iv) high focus on academic achievement (FAA), and (v) effective leadership (EL). Moreover, the five experts recommended 15 indicators, and 33 behavioral elements which resulting from the five vital factors with regards to fit the Thai context. The results of the first phase are exhibited in Table 2 below.

Table 2. Identification of Factors, Indicators, and their Behavioural Elements of High-Performance Primary School.

Factors	Indicators	Behavioral Elements
Culture of continuous improvement (CCI)	Teamwork (CCI1)	Teachers work as a team, participating in improving and developing integrated students' learning management. (CCI1.1)
		Teachers are part of the team in promoting and creating team unity. (CCI1.2)
		Teachers are a team with common goals and in the same directions with school goals. (CCI1.3)
	Personnel professional development (CCI2)	School encourages teachers to participate in professional development training to organize appropriate learning processes for students. (CCI2.1)
		Teachers have continuous professional development such as online training.to acquire knowledge from various academic community networks. (CCI2.2)
	Parents' participation (CCI3)	Parents' involvement in students' continuous improvement to reflect information of individual students. (CCI3.1)
		Parents' involvement in tracking student's progress and continuous development. (CCI3.2)
Innovative practices (IP)	Strategic planning to create innovation (IP1)	The school has strategic planning with teachers' participation to create educational innovations. (IP1.1)

		The school sets strategic success goals clearly to create educational innovations. (IP1.2)
	Creating an innovative learning community (IP2)	Teachers exchange knowledge in creating an innovative educational learning community. (IP2.1) Teachers exchange with external agencies to develop and disseminate work (IP2.2)
	Creating innovation using media and technology (IP3)	The school has excellent innovative and best practices (IP3.1) The school encourages teachers to use media and modern technology create appropriate educational innovations (IP3.2)
School and community participation (SCP)	Participation in education (SCP1)	Schools and communities set a vision together to provide education that meets local needs. (SCP1.1) Schools and communities develop educational curriculum together that are consistent with local context (SCP1.2)
	Supporting educational resources (SCP2)	School encourages students to exchange knowledge with the community using local learning and common wisdom. (SCP2.1) School creates a network to solve problems together and make student and school development in line with local agencies. (SCP2.2) The school participates together with community and local agencies in fund raising to support educational resources. (SCP2.3)
	Building good relationships (SCP3)	School publicizes information to the community and parents to create mutual understanding (SCP3.1) School builds confidence and faith through participation in various traditional activities with the community and has a good attitude towards each other. (SCP3.2)
High focus on academic achievement (FAA)	Having high expectations of students (FAA1)	Teachers with high commitment and dedication to teaching have high expectations for students' academic achievement (FAA1.1) Teachers have high expectations for students' academic achievement by creating a positive attitude of students (FAA1.2) Teachers encourage students to have their high expectations for academic success (FAA1.3)
	Effective learning management (FAA2)	School encourages teachers to organize active learning activities (FAA2.1) School encourages teachers to design learning management using various methods (FAA2.2)
	Measurement and evaluation according to actual conditions (FAA3)	School encourages teachers to measure and evaluate students according to their actual conditions using various methods (FAA3.1) School encourages teachers to analyze student assessment results in comparison to international test (PIZA) standards to develop students continuously (FAA3.2)
Effective leadership (EL)	Focus on academic development (EL1)	Administrators are academic leaders to conduct internal supervision and monitoring teachers' teaching to develop quality education continuously (EL1.1) Administrators always have academic knowledge and expertise through self-development (FAD1.2)
	Being a good role model (EL2)	Administrators are good examples in terms of their behaviors, reliability, honesty, morality and ethics, and positive attitude (EL2.1) Administrators are good role models in their work, thinking, decision making, dedicated, responsibility, and adaptation to changing situations (EL2.2)
	Effective communication (EL3)	Administrators can communicate and create clarity to link their personal goals to the same direction of the schools. (EL3.1) Administrators can communicate concisely to create a common understanding among teachers. (EL3.2)

After the researchers deliberated with the experts in educational measurement and evaluation, they suggested determining a cut-off point as a mean score of more than 3.00 and less than 20 percent as the coefficient of scattering (CV), to create those indicators on the foundation of prior studies related to the high-performing primary school administration. The results displayed that all the factors and indicators of high-performing primary school administration are achieving the conditions because the mean scores are more than 3.00 and CV values are less than 20%.

If the researchers arranged the indicators of high-performing administration showed that the highest mean score was building good relationships [SCP3] ($\bar{x}$ = 4.642; *SD* = 0.583). This was followed by being a good role model [EL2] ($\bar{x}$ = 4.573; *SD* = 0.707), teamwork [CCI1] ($\bar{x}$ = 4.550; *SD* = 0.612), personnel professional development [CCI2] ($\bar{x}$ = 4.542; *SD* = 0.618), having high expectations of students [FAA1] ($\bar{x}$ = 4.514; *SD* = 0.599), effective communication [EL3] ($\bar{x}$ = 4.511; *SD* = 0.720), focus on academic development [EL1] ($\bar{x}$ = 4.487; *SD* = 0.702), supporting educational resources [SCP2] ($\bar{x}$ = 4.415; *SD* = 0.681), effective learning

management [FAA2] ($\bar{x}$ = 4.413; *SD* = 0.619), creating innovation using media and technology [IP3] ($\bar{x}$ = 4.375; *SD* = 0.718), participation in education [SCP1] ($\bar{x}$ = 4.350; *SD* = 0.700), strategic planning to create innovation [IP1] ($\bar{x}$ = 4.315; *SD* = 0.708), measurement and evaluation according to actual conditions [FAA3] ($\bar{x}$ = 4.312; *SD* = 0.639), and parents' participation [CCI3] ($\bar{x}$ = 4.233; *SD* = 0.741), in that order. The indicator of creating an innovative learning community [IP2] ($\bar{x}$ = 4.154; *SD* = 0.673) found to be the least capacity, as elucidated in Table 3.

Table 3. Identification of Factors and their Indicators of High-Performing Primary School.

Factors	Indicators	Mean	Std. Dev	CV
Culture of continuous improvement (CCI)	Teamwork (CCI1)	4.550	0.612	13.40
	Personnel professional development (CCI2)	4.542	0.618	13.60
	Parents' participation (CCI3)	4.233	0.741	17.50
Innovative practices (IP)	Strategic planning to create innovation (IP1)	4.315	0.708	16.40
	Creating an innovative learning community (IP2)	4.154	0.673	16.20
	Creating innovation using media and technology (IP3)	4.375	0.718	16.40
School and community participation (SCP)	Participation in education (SCP1)	4.350	0.700	16.00
	Supporting educational resources (SCP2)	4.415	0.681	15.40
	Building good relationships (SCP3)	4.642	0.583	12.50
High focus on academic achievement (FAA)	Having high expectations of students (FAA1)	4.514	0.599	13.20
	Effective learning management (FAA2)	4.413	0.619	14.00
	Measurement and evaluation according to actual conditions (FAA3)	4.312	0.639	14.80
Effective leadership (EL)	Focus on academic development (EL1)	4.487	0.702	15.60
	Being a good role model (EL2)	4.573	0.707	15.40
	Effective communication (EL3)	4.511	0.720	15.90

Demographic Data of Respondents

A total of 400 circulated questionnaires were effectively collected from all high-performing primary schools that have been certified by the ONESQA in northeast region of Thailand, giving a response rate of 100 percent. There is almost equal balance of the respondents' gender, namely 235 (58.75%) are females and 165 (41.25%) are males. The demographic data showed that researchers obtained a comprehensive and representative sample in terms of their age and work experience as a good practice when conducting surveys to gather quantitative data. However, the majority of respondents are elderly as they are more than 41 years old (60.25%). Following this line of reasoning, most of respondents have longer working experience, namely 45.75%, 29.00%, and 25.25% of respondents have more than 11 years, between 5 to 10 years, and less than 5 years in descending order.

In addition, these respondents consisted of 178 (44.50%) school administrators and 222 (55.50%) respondents with a majority of them possessing a master's degree as the highest academic level (246, 61.50%). This was followed by 142 (35.50%) of respondents have bachelor's degree. Only 12 (3.00%) of respondents were awarded a doctoral degree as the highest academic level. This demographic data of respondents helps the researchers to capture diverse perspectives and insights across different demographic groups. In Thailand, primary schools are generally categorized into four types based on size, they are small (number of students are less than 119), medium (number of students are between120 to 719), large (number of students are between 720 to 1679), and extra-large (number of students are more than 1680). Interestingly, smaller schools often show higher performance due to following reasons such as student-teacher ratio, community engagement, flexibility and adaptability, and resource allocation. This can be explained as smaller schools typically have a lower student-teacher ratio, allowing for more individualized attention and support for each student. This can lead to better academic performance and stronger relationships between students and teachers. Therefore, more than 96.25 percent of respondents are from small and median school sizes, namely 163 (40.75%) and 222 (55.50%) respectively. Following this line of reasoning, 75 (18.75%) and 325 (81.25%) respondents are from the research schools that have been recognized as high-performing primary schools through ONESQA assurance. Table 4 demonstrates the demographic data of respondents and their attached schools.

Table 4. Profile of Respondents and Research Schools.

Background	Frequency (N= 480)	Percentage (%)
Gender:		
-Male	165	41.25
-Female	235	58.75
Total	400	100
Age		
-< 30 years old	67	16.75
-30 to 40 years old	92	23.00
->41 years old	241	60.25
Total	400	100
Work experience		
-<5 years	101	25.25
-5 to 10 years	116	29.00
>11 years	183	45.75
Total	400	100
Position		
-School administrators	178	44.50
-Teachers	222	55.50
Total	400	100
Academic qualification		
-Bachelor's degree	142	35.50
-Master's degree	246	61.50
-Doctoral degree	12	3.00
Total	400	100
School size		
-Small (Students<119)	163	40.75
-Median (120<students<719)	222	55.50
-Large (720<students<1,679)	10	2.50
-Extra-large (>1,680 students)	5	1.25
Total	400	100
Received ONESQA		
-Certified at Round 3 (2011 to 2015)	75	18.75
-Certified at Round 4 (2016 to 2020)	325	81.25
Total	400	100

The Goodness of Fit of the High-Performing Primary School Administration Factors and Indicators with the Empirical Data

The researcher requested to acquire estimates of the parameters of the high-performing primary school administrative model by validating the identified factors and their factor loading. Factor loading in the context of Confirmatory Factor Analysis (CFA) was used to analyze the standardized regression coefficients that represent the strength and direction of the relationships between observed variables (indicators) and latent factors. Therefore, CFA was used by researchers to measure the high-performing primary school administrative model and test the construct validity of a theoretical model.

The factor loadings imply how much of the variation in each observed variable is explained by the corresponding latent factor. Thus, the higher magnitude of a factor loading indicates a stronger relationship between the latent factor and observed variable as the magnitude of a factor loading ranges from 0 to 1. The co-variance with the high-performing primary school administrative factors ranged from 58.70 to 89.20 percent. The factor with the highest factor loading value is culture of continuous improvement (CCI). This is followed by innovative practices (IP), school and community participation (SCP), and high focus on academic achievement (FAA). The factor that has the least capacity for factor loading value is effective leadership (EL). Hence, the researchers concluded that all the vital factors are important constructs of high-performing primary school administration across all types of school size. The researchers looked for values above a certain threshold, such as 0.3, to assess the significance of factor loading. Table 5 illustrates the results of CFA for vital factors of high-performing primary school administration.

Table 5. The Results of CFA for Vital Factors of High-Performing Primary School Administration.

Factors	Factor Loading			R^2
	β	S.E.	t	
Culture of continuous improvement (CCI)	0.944	0.013	70.557	0.892
Innovative practices (IP)	0.921	0.015	63.313	0.848
School and community participation (SCP)	0.891	0.019	46.729	0.793
High focus on academic achievement (FAA)	0.853	0.024	36.000	0.728
Effective leadership (EL)	0.766	0.024	31.984	0.587

Then, the researchers considered several fit indices of SEM to evaluate the goodness of fit in this high-performing primary school administrative model to establish whether, overall, the model is acceptable. As a result, the researchers would typically compare the obtained values to commonly accepted threshold values to interpret the fit indices. Some widely used fit indices include the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) were used to provide information on how well the model fits the data, the degree of model misspecification, and the amount of unexplained variance.

The researchers considered the following criterion for acceptance threshold values to interpret the fit indices. Firstly, CFI and TLI values greater than 0.90 or 0.95 indicate a reasonably good model fit (Diamantopoulos & Siguaw, 2000). Secondly, RMSEA values below 0.08 or 0.06 suggest an acceptable fit (Hu & Bentler, 1999). Finally, SRMR values below 0.08 are often considered indicative of a good fit (Byrne, 1998; Diamantopoulos & Siguaw, 2000). The quantitative result showed that the high-performance primary school administrative model has a goodness of fit with the obtained data of $\chi^2 = 72.866$, df = 56, $\chi^2/df = 1.301$, *p*-value = 0.064, RMSEA = 0.027, SRMR = 0.022, CFI = 0.997, TLI = 0.994.

Even though the chi-square (χ^2) is the standard statistic to assess the overall fit of the model to the data, it is practically impossible not to reject the null hypothesis while large samples were used, according to Jöreskog and Sörbom (1993). Therefore, the researchers concluded that the high-performing primary school administrative model agreed with the empirical data. Thus, the high-performing primary school administrative model was accepted, and the researchers could establish whether specific paths were significant as elucidated in Figure 2.

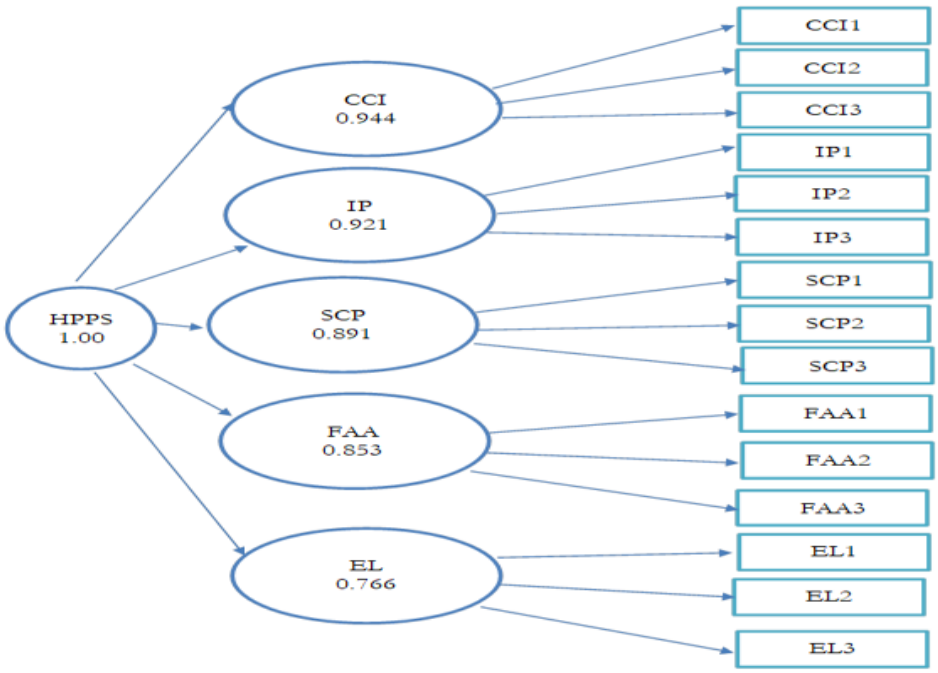

Figure 2. High-Performing Primary School Administrative Model.

CONCLUSION

The main objective of this study was to develop and validate a high-performance primary school administrative model through CFA. The results provide valuable insights into the vital factors that contribute to the success and high performance of primary schools in northeast region of Thailand. The study identified five vital factors for high-performance primary schools, including culture of continuous improvement (CCI), innovative practices (IP), school and community participation (SCP), high focus on academic achievement (FAA), and effective leadership (EL). These factors align with existing literature on educational effectiveness and provide a comprehensive framework for evaluating and improving school performance. The CFA results confirmed the hypothesized model, demonstrating that the identified factors significantly contribute to the overall performance of primary schools. The model showed good fit indices, indicating its robustness and applicability in diverse educational settings including all types of school size.

The validated model serves as a practical tool for educators and policymakers. By focusing on the identified factors, primary school administrators can implement targeted interventions to enhance performance as implications for practice. For instance, professional development programs can be designed to improve leadership and teaching quality, while strategies to boost student engagement and community involvement can be prioritized.

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