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Confirmatory Factor Analysis of Area-Based Management for Small-Sized Schools in Northeast Region of Thailand

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Abstract

This study intended to examine the factor and indicators of area-based management for small-sized schools in northeast region of Thailand. A quantitative research design using questionnaire as research instrument was employed by conducting a survey to 420 respondents consisting of 36 executives and 384 teachers. The results showed that goodness of fit for the identified factors and indicators are compliance with empirical data: $\chi^2 = 86.457$, $df = 71$, $\chi^2/df = 1.2177$, *p-value* $= 0.1023$, *RMSEA* $= 0.023$, *SRMR* $= 0.014$, *CFI* $= 0.998$, *TLI* $= 0.996$. *In conclusion, these fit indices determined that area-based management model is well aligned.*

Keywords: *Area-based management model, factors, indicators, small-sized school*

Introduction

Area-based management in small-sized schools involves a strategic approach to school administration that focuses on specific functional areas within the school. This management model recognizes the unique challenges and opportunities associated with small-sized schools and tailor's administrative practices to suit the context (Mwelwa & Sohawon, 2021). Some key factors have been included by past researchers in an area-based management model, such as participation of local network partners (Asaduzzaman & Virtanen, 2021), formulation of area-based policies (Croci et al., 2022), area-based curriculum development (Pak et al., 2020), mobilization of local resource (Usman, 2016), and promotion of teacher learning in local context (Lee, 2019). Therefore, school executives need to tailor their management practices to specific areas within the school while they are implementing area-based management in small-sized schools. This requires a thoughtful and adaptable approach that takes into account the unique characteristics of the school in order to enhance efficiency, collaboration, and overall educational outcomes (Mwelwa & Sohawon, 2021).

In the context of small-sized schools in Thailand, the participation of local network partners in area-based management is a crucial factor for fostering collaboration, leveraging resources, and addressing the unique challenges faced by these small-sized schools (Asaduzzaman & Virtanen, 2021). The school executives can foster active participation from local network partners so that small-sized schools in Thailand can benefit from a broader range of resources, expertise, and support. The collaboration enhances the overall educational experience, contributes to community development, and helps address the unique challenges faced by these small-sized schools (Asaduzzaman & Virtanen, 2021).

Mobilization of local resources is a crucial factor in the successful implementation of area-

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based management in small-sized schools, according to Usman (2016). This approach recognizes the importance of leveraging local resources, both human and material, to meet the unique needs of specific functional areas within the school. Generally, school executives can create a collaborative and supportive environment by actively engaging the local community and tapping into its resources to enhance the effectiveness of local resource mobilization factor of area-based management. This factor not only strengthens the educational experience for students but also fosters a sense of community ownership and pride in the success of the small-sized school.

According to Croci et al. (2022), formulation of area-based policies in the context of area-based management involves the development and implementation of policies that address the specific needs, challenges, and opportunities within distinct functional areas. This factor recognizes that different areas within a school may have unique characteristics and requires tailored policies to optimize resource allocation, improve services, and foster local development. Consequently, area-based policy formulation requires a comprehensive and participatory approach to ensure that policies align with the specific needs and aspirations of each area. In other words, school executives can tailor policies to the local context and engage stakeholders in the decision-making process, thus promote area-based management to contribute to more effective and sustainable community development (Croci et al., 2022).

Another essential factor of area-based management is area-based curriculum development that involves tailoring educational programs to the specific needs, characteristics, and context of distinct functional areas. This factor recognizes that different communities may have unique requirements and priorities (Pak et al., 2020). In short, area-based curriculum development aims to create an educational experience that is meaningful, relevant, and responsive to the needs of the local community. School executives are encouraged to tailor the curriculum to the unique characteristics of each area in order to foster a sense of connection, engagement, and community pride among students (Pak et al., 2020).

The final factor is promoting teacher learning in the local context of area-based management involves designing professional development strategies that are tailored to the specific needs and challenges of teachers within a particular functional area (Lee, 2019). By tailoring professional development opportunities to the local context of area-based management, teachers can enhance their effectiveness, better connect with students, and contribute to the overall success of educational initiatives within their community (Lee, 2019).

The researchers conceptualized the key factors and their associated indicators of area-based management to develop a measurement model. This was followed by cross-examining by five academic specialists to confirm the identified factors and indicators in preliminary study. Following this line of reasoning, this research aims to develop an area-based management model that can assist small-sized school executives to divide the school into manageable administrative areas based on physical layout, grade levels or functional areas such as academic, extracurricular, and facilities, prioritize resource allocation based on the specific needs of each area, foster collaboration among administrators, teachers, and staff within each area, tailor professional development opportunities to address the unique needs of teachers within different areas, engage with local community to understand its unique characteristics and involve community members in the educational process, and recognize that small-sized schools may have limited resources and adapt area-based management strategies to align with available resources (Mwelwa & Sohawon, 2021).

Materials and Methods

Research Design

The researchers employed a mixed-mode research design by conducting a qualitative method using in-depth interviews and a quantitative method using a survey design. The strength of employing both methods of data collection is to generate deeper, and ultimately the research results will be more reliable, actionable, and useful research intuitions (Larvakas, 2008). Therefore, the research procedure was comprised of two stages. In the first stage, the researchers conceptualized area-based management factors and indicators. 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 stage. The relationships are epitomized by path coefficients or deterioration between the area-based management factors and their indicators. Figure 1 demonstrates the research procedure.

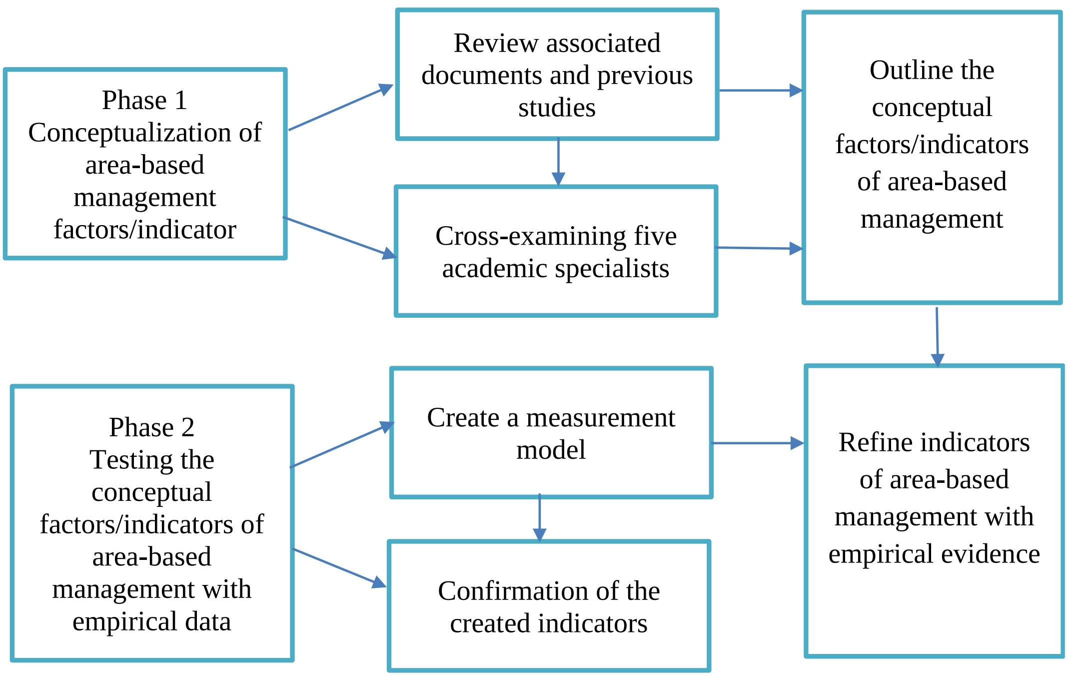

Figure 1. Research Framework.

Population and Sampling

A multi-stage sampling method was governed to select samples from multiple levels. This method was used because the target population is large and diverse, making it impractical to conduct a simple random sample. Moreover, multi-stage sampling allows the researchers to break down the population into smaller, more manageable units and then sample from these units in stages. Firstly, a subset of clusters was randomly selected from the population, that was a province. The number of clusters selected depended on the desired sample size and the sampling method chosen was a simple random sampling technique. Secondly, systematic sampling was employed within each selected cluster depending on the small-sized schools. The number of samples within each cluster was proportional to the cluster size, depending on the school size.

At the final stage, the research population was comprised of school executives and teachers from 20 provinces in northeast region of Thailand. The researchers employed Becker and Ismail's (2016) rule of thumb to formulate an adequate sample size (N). The identified sample size was recognized as the presence of classified practice in reaching an adequate probability of the requisite findings include model convergence, statistical precision and statistical power for particular confirmatory factor analysis (CFA)with empirical data. The sample size was obtained per parameter in the ratio of 20:1. Since there were 21 parameters, the required sample size was 420 respondents. Since the sub-group were school executives and teachers, the researchers selected school executive and teacher by proportionate from 6646 primary small-sized schools, making up a total of 420 samples consisting of 36 school executives and 384 teachers. The survey was directed to evaluate the factors and indicators of the area-based management model. Table 1 shows the distribution of the population and sample group.

Table 1: Distribution of Population and Sample Groups.

Province	**Number of schools**	**Population**		**Samples**		**Total**
		Executive	Teacher	Executive	Teacher	
Kalasin	318	192	2116	2	18	20
Khon Kaen	600	309	3937	3	32	35
Chaiyaphum	388	262	2566	3	21	24
Nakhon Phanom	252	183	1778	2	15	17
Nakhon Ratchasima	661	349	4864	3	40	43
Bueng Kan	87	62	709	1	7	8
Buriram	368	231	2767	2	23	25
Mahasarakham	374	250	2457	2	20	22
Mukdahan	142	84	1064	1	9	10
Yasothon	233	143	1521	1	13	14
Roi Et	468	267	3021	2	25	27
Loei	256	135	1407	1	12	13
Sisaket	435	292	3191	3	26	29
Sakon Nakhon	279	143	2224	1	18	19
Surin	300	165	2327	1	19	20
Nong Khai	151	97	1023	1	9	10
Nong Bua Lamphu	167	110	1135	1	10	11
Amnat Charoen	174	129	1318	1	11	12
Udon Thani	394	247	2723	2	23	25
Ubon Ratchathani	599	379	4145	3	33	36
Total	6646	4029	46,293	36	384	420

Source: Office of the Basic Education Commission (2022).

Research Instrument

The researchers used two types of questionnaires, namely open questions and closed questions as two resources of data collection. The five experts in the first phase were requested to respond to the 32 open questions which allowed them to express their opinions regarding the identified factors and indicators. The researchers aimed to accumulate substantial comments from the five experts by using open questions which seemed to be worked better in permitting them to intricate their comments in detail.

In the final phase, the researchers utilized an online survey questionnaire consisting of 55 closed questions as a method to collect quantitative data. The closed question structure was employed by limiting 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 was intended to collect information pertaining to respondents' perceptions of area-based management. Section A collects respondents' demographic backgrounds, namely gender, age, working experience, highest academic degree, and position. Section B to G was specifically designed to gauge data about area-based management consists of five factors with a total of 50 questions.

Data Analysis

The researchers employed Tolerance and Variance Inflation Factor (VIF) as two concepts used in the context of multiple regression analysis to assess multicollinearity among the independent variables (predictors) in a regression model. Tolerance is a measure of how well one independent variable can be predicted by the other independent variables in the model. It is calculated as the reciprocal of the VIF for each independent variable. The tolerance value ranges between 0 and 1, where 1 indicates no multicollinearity (no correlation with other variables), and values closer to 0 indicate high multicollinearity (strong correlation with other variables). Tolerance is calculated as follows: Tolerance = 1 / VIF

VIF is a statistical measure that quantifies the extent of multicollinearity between each independent variable and the other independent variables in the regression model. Multicollinearity occurs when two or more independent variables are highly correlated, making it difficult to distinguish their individual effects on the dependent variable. High VIF values indicate strong multicollinearity. VIF is calculated for each independent variable as follows: $VIF = 1 / (1-R^2)$ where R^2 is the coefficient of determination of the regression model with the particular independent variable as the outcome variable and all other independent variables as predictors.

Table 2: VIF Value and its Interpretation.

VIF Value	Interpretation
=1	No multicollinearity (perfectly uncorrelated with other variables).
1<VIF<5	Low to moderate multicollinearity.
VIF>5	High multicollinearity (potentially problematic).

After the researchers determined the correlation matrix of area-based management factors, Confirmatory Factor Analysis (CFA) tested a hypothesized factor structure of a set of observed variables. In CFA, the researchers proposed an area-based management measurement model with predetermined relationships (factor loadings) between the latent variables (factors) and the observed variables (indicators). Therefore, the purpose of using CFA was to confirm whether the proposed model fits the data well and to assess how well the model's structure represents the relationships between the variables (Gay et al., 2009).

Structural Equation Modeling (SEM) was used to analyze the relationships between multiple variables in a complex system. The SEM was chosen because it combines indicators of both factor analysis and regression analysis to create a comprehensive model that not only captures the direct relationships between variables but also includes latent variables (unobserved variables that are inferred from observed variables) and measurement error (Hair et al., 2013). Furthermore, several goodness-of-fit indices commonly used in SEM were used by the researchers such as the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) (Hair et al., 2013). The CFI, TLI, RMSEA, and SRMR are commonly used in SEM and CFA to assess the fit of this specified model of mindful meditation practice to enhance the growth mindset model to the observed data.

The CFI compares the fit of this specified model to a baseline model. The baseline model is typically the null model, which assumes no relationships among variables, for example, all variables are uncorrelated. The CFI ranges from 0 to 1, with higher values indicating better model fit. A CFI value closer to 1 indicates a better fit, with values above 0.90 generally considered acceptable and values above 0.95 indicating a very good fit. The CFI is a goodness-of-fit index that assesses how well a proposed model fits the data, taking into account the improvement in fit compared to a baseline model. The TLI is another goodness-of-fit index. The TLI like the CFI, compares the fit of the specified model to a baseline model. It provides a measure of incremental fit improvement over the baseline model. The TLI ranges from 0 to 1, with values closer to 1 indicating a better model fit. Generally, TLI values above 0.90 are considered acceptable, and values above 0.95 indicate a very good fit.

The RMSEA is another widely used to evaluate how well a specified model fits the observed data. RMSEA measures the discrepancy between the implied model and the observed covariance matrix, taking into account the complexity of the model. It provides an estimate of the average discrepancy between the model-implied covariance matrix and the observed covariance matrix per degree of freedom. The RMSEA values range from 0 to 1, where lower values indicate a better model fit. The interpretation of RMSEA values is displayed in Table 4.

Table 3: RMSEA Value and its Interpretation.

RMSEA Values	Interpretation
≤ 0.05	Excellent fit
$0.05 < RMSEA \leq 0.08$	Good fit
$0.08 < RMSEA \leq 0.10$	Fair fit
$RMSEA > 0.10$	Poor fit

The SRMR measures the discrepancy between the observed covariance matrix and the model-implied covariance matrix. It is a measure of the discrepancy in the model's implied covariances or correlations compared to the observed covariances or correlations. The SRMR is computed by taking the square root of the mean square of the differences between the observed and predicted covariances, standardized by average observed covariance. The SRMR values range from 0 to ∞, with lower values indicating better model fit. Generally, SRMR values below 0.08 are considered acceptable, and values below 0.05 are indicative of a very good model fit.

The SRMR is particularly useful in situations where the focus is on the absolute discrepancy between the model and the data, rather than comparing the model to a baseline model. Unlike the CFI, and TLI, which are comparative fit indices, the SRMR provides an absolute measure of fit. The researchers decided to use SRMR in combination with other fit indices such as CFI, TLI, and RMSEA to get a more comprehensive assessment of the model fit. Like other fit indices, SRMR helps the researchers to determine how well our hypothesized model approximates the observed data and whether the model is a good representation of the underlying relationships among variables.

Results and Discussion

Identification of Area-based Management Factors and Indicators

The results of first phase identified five essential factors of area-based management: (i) Participation of local network partners (PN); (ii) formulation of area-based policies (FP); (iii) area-based curriculum development (CD); (iv) mobilization of local resource (MR), and (v) promotion of teacher learning in local context (TL). Moreover, there were 16 area-based management indicators which derived from the five essential factors with regards to fit the Thai context. Table 4 display the details of the essential factors and their indicators of area-based management.

After the researchers discussed 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 previous studies related to the area-based management. The results indicated that all the factors and indicators of area-based management are fulfilling the conditions because the mean scores are more than 3.00 and CV values are less than 20%. If we arranged the factors of area-based management showed that the highest mean score was curriculum measurement and evaluation ($\bar{x}$ = 4.29; *SD* = 0.41). This was followed by guidelines implementation ($\bar{x}$ = 4.24; *SD* = 0.75), determination of educational direction ($\bar{x}$ = 4.23; *SD* = 0.42), collaborative learning management and curriculum implementation ($\bar{x}$ =4.22), formulation of policies and strategies, curriculum design, culture and local wisdom, and innovation and technology ($\bar{x}$ =4.21), school development ($\bar{x}$ =4.20), local scholar, scholarship, and local learning management ($\bar{x}$ =4.19), and curriculum goal and local learning resources ($\bar{x}$ = 4.17), in that order. The monitoring and evaluation indicator was found to be the least capacity ($\bar{x}$ = 4.13; *SD* = 0.55), as illustrated in Table 4.

Table 4: Identification of Factors and their Indicators of Area-based Management.

Factors	Indicators	Mean	Std. Dev	CV
Participation of local network partners (PN)	Determination of educational direction (PN1)	4.23	0.42	10.12
	School development (PN2)	4.20	0.55	13.27
	Collaborative learning management (PN3)	4.22	0.54	12.90
Formulation of area-based policies (FP)	Formulation of policies and strategies (FP1)	4.21	1.44	10.47
	Guidelines implementation (FP2)	4.24	0.75	17.70
	Monitoring and evaluation (FP3)	4.13	0.55	13.43
Area-based curriculum development (CD)	Curriculum goals (CD1)	4.17	0.42	10.20
	Curriculum design (CD2)	4.21	0.52	12.59
	Curriculum implementation (CD3)	4.22	0.51	12.25
	Curriculum measurement and evaluation (CD4)	4.29	0.41	9.75
Mobilization of local resource (MR)	Local learning resources (MR1)	4.17	0.76	18.39
	Local scholars (MR2)	4.19	0.56	13.41

	Scholarship (MR3)	4.19	0.54	12.93
Promotion of teacher learning in local context (TL)	Culture and local wisdom (TL1)	4.21	0.58	13.82
	Local learning management (TL2)	4.19	0.51	12.36
	Innovation and technology (TL3)	4.21	0.43	10.23

Intercorrelation between Area-based Management Indicators

An area-based management model was then developed by the researchers which representing the identified five factors and 16 indicators through arranging them in a logical manner to reflect their interrelationships. Hence, this model would provide a comprehensive and structured overview of the ethical considerations relevant to area-based management within the researchers' selected scope. The results of Pearson correlation coefficients were utilized to measure the linear relationships between pairs of 16 indicators.

Table 5 elucidates the results of intercorrelation between the 16 indicators of area-based management indicating that there are positive correlations for all relationships between pairs of 16 indicators. This implies that as one indicator increases, the other tends to increase too. In addition, the magnitude of the correlation coefficients ranged from 0.523 to 0.815 revealing the strengths of the relationships from moderate to strong, with values closer to 1 representing a stronger correlation and all the relationships are statistically significant at 0.01 level. Consequently, results also showed that the relationship between the collaborative learning management indicator (PN3) and formulation of policies and strategies indicator (FP1) ($r = .815$; $r<.01$) was the highest magnitude of the correlation coefficient. However, the lowest magnitude of the correlation coefficient was the guidelines implementation indicator (FP2) and culture and local wisdom indicator (TL1) ($r = .523$; $p<0.01$), as illustrated in Table 5.

Table 5: Intercorrelations Results of Identifying Indicators of Area-based Management.

	PN1	**PN2**	**PN3**	**FP1**	**FP2**	**FP3**	**CD1**	**CD2**	**CD3**	**CD4**	**MR1**	**MR2**	**MR3**	**TL1**	**TL2**	**TL3**
PN1	1.00	.809**	.730**	.770**	.659**	.701**	.726**	.669**	.724**	.645**	.684**	.680**	.594**	.577**	.664**	.753**
PN2		1.00	.731**	.784**	.638**	.715**	.712**	.657**	.704**	.636**	.706**	.677**	.565**	.545**	.628**	.744**
PN3			1.00	.815**	.582**	.692**	.729**	.643**	.677**	.594**	.720**	.644**	.538**	.546**	.622**	.731**
FP1				1.00	.649**	.721**	.748**	.733**	.706**	.655**	.721**	.680**	.552**	.525**	.654**	.771**
FP2					1.00	.678**	.679**	.630**	.665**	.589**	.592**	.631**	.526**	.523**	.632**	.715**
FP3						1.00	.787**	.712**	.718**	.609**	.673**	.644**	.568**	.526**	.617**	.717**
CD1							1.00	.805**	.787**	.690**	.734**	.720**	.611**	.599**	.699**	.785**
CD2								1.00	.754**	.670**	.726**	.676**	.605**	.558**	.684**	.719**
CD3									1.00	.720**	.740**	.745**	.693**	.660**	.705**	.731**
CD4										1.00	.681**	.709**	.668**	.638**	.691**	.685**
MR1											1.00	.720**	.610**	.598**	.650**	.719**
MR2												1.00	.721**	.664**	.697**	.735**
MR3													1.00	.770**	.699**	.625**
TL1														1.00	.740**	.608**
TL2															1.00	.775**
TL3																1.00

**Correlation Coefficient is Significant at the 0.01 Level (2-Tailed).

Initial Results of Multicollinearity

Tolerance and VIF are measures used to assess multicollinearity among predictor variables in the context of area-based management model. Multicollinearity occurs when two or more independent variables in a regression model are highly correlated, making it challenging to separate their individual effects on the dependent variable (Hair et al., 2013). Tolerance values range from 0 to 1, where higher values indicate lower multicollinearity. On the other hand, a low tolerance value (close to 0), suggests high multicollinearity and implies that the variable is redundant or highly correlated with others. A common threshold for tolerance is 0.1. Since the results of tolerance value were more than 0.1, suggested low multicollinearity and implied that the variables were lowly correlated or no redundant issue (refer to Table 6).

VIF is the reciprocal of the tolerance and is calculated for each predictor in the model. VIF values greater than 1 indicate the extent to which the variance of the estimated regression coefficients is increased due to multicollinearity. Since the results of VIF values are found between 1 to 5, which is considered low to moderate multicollinearity (refer to Table 2 and Table 6).

Table 6: Tolerance and Variance Inflation Factor (VIF).

Acronym	Indicators	Tolerance	VIF
PN1	Determination of educational direction	0.257	3.893
PN2	School development	0.254	3.942
PN3	Collaborative learning management	0.265	3.772
FP1	Formulation of policies and strategies	0.208	4.810
FP2	Guidelines implementation	0.401	2.494
FP3	Monitoring and evaluation	0.297	3.366
CD1	Curriculum goals	0.201	4.977
CD2	Curriculum design	0.266	3.765
CD3	Curriculum implementation	0.243	4.112
CD4	Curriculum measurement and evaluation	0.352	2.843
MR1	Local learning resources	0.297	3.368
MR2	Local scholars	0.866	3.497
MR3	Scholarship	0.303	3.304
TL1	Culture and local wisdom	0.310	3.223
TL2	Local learning management	0.263	3.797
TL3	Innovation and technology	0.214	4.677

The Goodness of Fit of the Area-based Management Factors and Indicators with the Empirical Data

The researcher wanted to acquire estimates of the parameters of the area-based management model by validating the identified factors and their factor loading. Factor loading in the context of 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. In other words, factor loading means the 'relative importance' of the identified indicators that collectively form a specifically identified factors in the area-based management model of small-sized schools. Therefore, CFA was used by researchers to assess the area-based management model and test the construct validity of a theoretical model.

The factor loadings indicate how much of the variation in each observed variable is explained by the corresponding latent factor. As a result, 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 results of the co-variance with area-based management factors ranged from 90.70 to 98.40 percent. As presented in Table 7 below, the factor loading of all the area-based management factors are ranged from 0.952 to 0.992 and is statistically significant at 0.01. The component with the highest factor loading value is mobilization of local resource (MR) (β = 0.992). This is followed by formulation of area-based policies (FP) (β = 0.984), Area-based curriculum development (CD) (β = 0.982), and promotion of teacher learning in local context (β = 0.955). The factor that has the lowest factor loading value is participation of local network partners (β = 0.952). The researchers looked for values above a certain threshold, such as 0.3, to assess the significance of factor loading. In conclusion, all the essential factors are found to be essential constructs of area-based management for school executives who are administering in small-sized schools (refer to Table 7).

Table 7: The Results of CFA for Key Components of Area-based Management.

Factors	Factor Loading			R^2	Factor Score Coefficient (FS)
	β	S.E.	t		
Participation of local network partners (PN)	0.952	0.011	84.508	0.907	0.021
Formulation of area-based policies (FP)	0.984	0.007	134.001	0.967	0.014
Area-based curriculum development (CD)	0.982	0.007	148.318	0.964	0.013
Mobilization of local resource (MR)	0.992	0.010	101.762	0.984	0.019
Promotion of teacher learning in local context (TL)	0.955	0.011	89.149	0.911	0.020

Furthermore, the results of the co-variance with the area-based management indicators are found in the range of 51.50 to 78.60 percent. As demonstrated in the following Table 8, the factor loading of all the area-based management indicators are ranged from 0.416 to 0.589 and is statistically significant at 0.01. In this line of reasoning, all the identified indicators are considered essential constructs for the area-based management model.

Table 8: The Results of CFA for Key Indicators of Area-based Management.

Indicators	Factor Loading			R^2	Coefficient of Score (FS)
	β	S.E.	t		
Participation of local network partners (PN)					
Determination pf educational direction (PN1)	0.550	0.025	21.973	0.763	0.027
School development (PN2)	0.549	0.025	21.627	0.748	0.028
Collaborative learning management (PN3)	0.532	0.026	20.851	0.704	0.028
Formulation of area-based policies (FP)					
Formulation of policies and strategies (FP1)	0.492	0.023	21.474	0.725	0.026
Guidelines implementation (FP2)	0.505	0.026	19.076	0.624	0.032
Monitoring and evaluation (FP3)	0.589	0.029	20.398	0.680	0.029
Area-based curriculum development (CD)					
Curriculum goals (CD1)	0.534	0.023	23.021	0.786	0.022
Curriculum design (CD2)	0.525	0.025	20.631	0.688	0.028
Curriculum implementation (CD3)	0.516	0.022	23.149	0.749	0.022
Curriculum measurement and evaluation (CD4)	0.445	0.023	19.277	0.626	0.031
Mobilization of local resource (MR)					
Local learning resources (MR1)	0.552	0.026	21.217	0.724	0.028
Local scholars (MR2)	0.492	0.024	20.655	0.695	0.029
Scholarship (MR3)	0.416	0.025	16.402	0.503	0.037

Promotion of teacher learning in local context (TL)					
Culture and local wisdom (TL1)	0.444	0.028	16.093	0.515	0.040
Local learning management (TL2)	0.501	0.024	20.529	0.683	0.028
Innovation and technology (TL3)	0.583	0.023	25.088	0.889	0.021

According to Ullman (2001), the overall model whether is acceptable or not in structural equation modelling (SEM) depending on the fit indices. The goodness of fit result exposed that the area-based management model fits between the obtained values of collected data and the expected values as follow, χ^2 = 86.457, df = 71, χ^2/df = 1.2177, CFI = 0.998, TLI = 0.996, RMSEA = 0.023, and SRMR = 0.014. These tests were employed to determine how associated real values are fitting to the expected values in the area-based management model. The researchers referred to the following specialists' rules of thumb and their recommended cut-off values for evaluating fit indices in SEM as elucidated in Table 9.

Table 9: Interpretation of Goodness of Fit for Area-based Management Model

Goodness of Fit Indexes	Real Values	Rules of Thumb or Cut-off Values	Specialist	Interpretation
χ^2/df	1.221	<2<5	Ullman (2001) Schumacker and Lomax (2004)	Pass
CFI	0.997	≥ 0.95	Hu and Bentler (1999)	Pass
TLI	0.995	≥ 0.95	Hu and Bentler (1999)	Pass
RMSEA	0.023	<0.06<0.07	Hu and Bentler (1999) Steiger (2007)	Pass
SRMR	0.017	<0.05	Byrne (1998)	Pass

In this line of reasoning, it is finalized that the area-based management model is approved with the empirical data. Hence, the measurement model was accepted according to the above rules of thumb and cut-off values. Therefore, the researchers established precise and significant paths of the area-based management model as illustrated in Figure 2.

Figure 2: Area-based Management Model.

Conclusion

An area-based management model was projected and verified its goodness of fit. The results indicated that all five factors have a solid, positive, and significant impact on the area-based management of small-sized schools. On top of that, the measurement model showed that high prediction impact is mobilization of local resource factor. Therefore, small-sized school executives must grow their expectations through the identified factors and their indicators. It is essential for school executives to involve the local community in the planning and decision-making processes related to area-based management and encourage community members to contribute their time, skills, and expertise as volunteers in various school initiatives (Mwelwa & Sohawon, 2021).

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