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DEVELOPMENT AND PRELIMINARY VALIDATION OF A CONTEXT-SENSITIVE SCHOOL-BASED MANAGEMENT INSTRUMENT BASED ON MALUKU'S LOCAL POTENTIAL

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ABSTRACT

This study aimed to develop and provide preliminary psychometric evidence for a School-Based Management (SBM) implementation instrument integrating Maluku's local potential, Indonesia. The study employed an instrument development and preliminary validation design consisting of construct conceptualization, item development, expert content validation, empirical testing, and psychometric evaluation. Content validity was assessed by four experts using Aiken's V, followed by empirical testing involving 107 senior high school teachers. Internal consistency reliability and Exploratory Factor Analysis (EFA) were conducted to examine the instrument's psychometric properties. The Aiken's V coefficients ranged from 0.667 to 1.000 (mean = 0.877), indicating satisfactory content validity, while the instrument showed excellent internal consistency (Cronbach's α = 0.944). The data were suitable for factor analysis, as demonstrated by the KMO value of 0.675 and significant Bartlett's test ($p < .001$). EFA identified a six-factor structure explaining 68.4% of the total variance, with 48 items achieving factor loadings ≥ 0.40. This study contributes a context-sensitive SBM instrument that integrates Maluku's local potential into school management practices. Further validation with larger and independent samples is recommended.

ABSTRAK

Penelitian ini bertujuan mengembangkan dan memperoleh bukti psikometrik awal instrumen implementasi Manajemen Berbasis Sekolah (MBS) yang mengintegrasikan potensi lokal Maluku. Penelitian menggunakan desain pengembangan dan validasi awal yang mencakup konseptualisasi konstruk, pengembangan butir, validasi ahli, uji empiris, dan evaluasi psikometrik. Validasi isi dilakukan oleh empat ahli, sedangkan uji empiris melibatkan 107 guru sekolah menengah atas. Hasil penelitian menunjukkan nilai Aiken's V sebesar 0,667–1,000 (rata-rata = 0,877) serta reliabilitas internal yang sangat baik (Cronbach's α = 0,944). Kelayakan analisis faktor ditunjukkan oleh nilai KMO sebesar 0,675 dan hasil uji Bartlett yang signifikan ($p < 0,001$). Analisis Faktor Eksploratori (EFA) menghasilkan enam faktor yang menjelaskan 68,4% varians total, dengan 48 butir memiliki factor loading ≥ 0,40, sedangkan dua butir memerlukan evaluasi lebih lanjut. Kebaruan penelitian ini terletak pada pengembangan instrumen MBS yang sensitif terhadap konteks lokal dan mengintegrasikan potensi Maluku dalam praktik manajemen sekolah pada wilayah kepulauan. Instrumen ini menyediakan bukti psikometrik awal untuk mengukur implementasi MBS secara kontekstual, namun validasi lanjutan dengan sampel yang lebih besar dan independen tetap diperlukan.

Kata kunci: *Evaluasi psikometrik, exploratory factor analysis, manajemen berbasis sekolah, pengembangan instrumen, potensi lokal Maluku*

INTRODICTION

Educational governance reforms have increasingly positioned schools not merely as implementers of policy but as autonomous organizations responsible for translating educational policies into decisions that address students' needs and local contextual conditions. In practice, policies formulated at the global or national level inevitably undergo processes of interpretation and adaptation when implemented at the school level, as educational systems and schools differ in their organizational structures, institutional capacities, and sociocultural contexts (Steiner-Khamsi, 2021). Consequently, the effectiveness of educational policy implementation depends not only on adopting recommended governance models but also on schools' capacity to adapt these policies to their institutional characteristics and local contexts (Seitzer et al., 2024).

Schools' ability to translate policy into practice is closely associated with decision-making authority, leadership, accountability, evidence-informed decision making, and stakeholder participation (Ulfatin et al., 2022). Contemporary educational governance increasingly emphasizes accountability, monitoring, and evaluation as essential mechanisms for improving school performance and organizational effectiveness. Likewise, partnerships among schools, families, and local communities have become fundamental for ensuring educational support that is responsive to students' needs (Chatzipanagiotou & Katsarou, 2023). Accordingly, school management should be conceptualized as an integrated system in which leadership, institutional accountability, and stakeholder engagement interact to strengthen organizational capacity and improve educational outcomes (Ngobeni, 2024).

The integration of these governance dimensions becomes particularly important when schools operate within distinctive geographical and sociocultural environments, as school leaders interpret and enact policies through the specific institutional and social contexts in which schools are embedded (Trujillo et al., 2021). Place-based education highlights that students' surrounding environments and lived experiences constitute valuable resources for developing contextualized, meaningful, and responsive learning (Pradana, Nurdiana, et al., 2026). By incorporating environmental issues and community-specific phenomena into educational practices, schools can foster learning experiences that are more closely connected to local social and cultural realities (Hernandez et al., 2022). In the context of Maluku, therefore, school management should acknowledge the province's archipelagic characteristics, maritime environment, local culture, social diversity, religious tolerance, limited educational resources, and community networks as integral components of educational governance.

Despite the importance of contextual adaptation, the implementation and evaluation of School-Based Management in Maluku remain challenged by the absence of measurement approaches that adequately capture the characteristics of an archipelagic educational environment. The geographical dispersion of islands, unequal accessibility, limitations in educational resources, and variations in community participation create different management conditions across schools. Previous studies have highlighted that educational development in Maluku continues to face challenges related to infrastructure, teacher distribution, and contextual adaptation of educational policies due to its archipelagic characteristics (Nurlatu et al., 2025; Pattiasina et al., 2026). Therefore, relying solely on general School-Based Management measurement instruments may provide limited representation of school management practices in regions with distinctive geographical and sociocultural conditions. This situation highlights the need for a context-sensitive instrument capable of assessing SBM implementation while incorporating the unique characteristics of

Maluku's educational setting.

The need for context-sensitive school management also necessitates measurement instruments capable of accurately representing the intended constructs. Instrument development extends beyond generating items based solely on researchers' assumptions; rather, it requires systematic conceptualization, expert evaluation, empirical testing, and examination of the instrument's internal structure. Previous studies on educational instrument development consistently emphasize that expert review is essential for establishing content relevance and ensuring alignment between questionnaire items and their underlying theoretical constructs. Subsequently, psychometric evaluation is required to determine whether the proposed items function adequately through evidence derived from validity, reliability, and item performance analyses within the target population (Saputra et al., 2026).

From a psychometric perspective, instrument validation should be viewed as an ongoing process of accumulating evidence rather than as a single decision based on one statistical coefficient. Robust instrument development typically involves several sequential stages, including construct specification, item generation grounded in theoretical frameworks, expert judgment, pilot testing, and evaluation of psychometric properties through item analyses and internal structure assessment (Stefana et al., 2025). Accordingly, evidence of content validity and internal consistency should be complemented by analyses of internal structure, including exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), to determine whether the empirical relationships among items adequately represent the proposed conceptual domains (Zhao et al., 2024).

Evaluating the internal structure is particularly important when the underlying factor configuration has not yet been empirically established, as exploratory factor analysis enables researchers to identify latent structures underlying observed variables (Dabbagh et al., 2023). Exploratory factor analysis provides an appropriate framework for identifying latent relationships among observed variables, whereas determining the optimal number of retained factors requires consideration of multiple complementary criteria, including eigenvalues, scree plots, parallel analysis, and substantive interpretability, to avoid both under and over extraction of factors (Laupichler et al., 2023). Consequently, factor-retention decisions represent a critical stage of psychometric evaluation because they determine whether the retained factors meaningfully capture the covariance structure among items and adequately represent the constructs being measured (Howard & Henderson, 2023).

Although previous studies on School-Based Management (SBM) have extensively examined issues such as school autonomy, leadership, community participation, transparency, accountability, and quality assurance, existing measurement instruments primarily focus on governance structures, stakeholder representation, and institutional accountability. Wilson & Lubienski (2022) emphasized democratic representation within school governance, whereas Prior et al. (2021) evaluated school accountability systems using performance indicators and value-added measures. Despite their contributions, these approaches do not explicitly incorporate contextual dimensions such as archipelagic geography, maritime characteristics, local culture, religious tolerance, resource limitations, accessibility, and community networks into a unified instrument for assessing SBM implementation. Consequently, there remains a need for an instrument that not only measures managerial and governance functions but also captures schools' capacity to implement educational policies within their local contexts.

Addressing this gap, the present study develops an instrument for assessing School-Based

Management implementation by integrating conventional governance dimensions with the distinctive local potential of Maluku. The development of educational measurement instruments requires empirical evidence to ensure that the intended constructs are adequately represented and validly interpreted within the target population (Knekta et al., 2019). The proposed instrument was constructed based on fifteen conceptual dimensions encompassing managerial practices, school services, flagship programs, and contextual characteristics unique to Eastern Indonesia. The instrument was subsequently evaluated through content validity, internal consistency reliability, and exploratory factor analysis to establish preliminary evidence of its psychometric properties and underlying factor structure. Therefore, this study contributes not only by developing a context-sensitive measurement instrument but also by exploring how theoretically derived dimensions of School-Based Management are empirically organized within the educational context of Maluku.

Accordingly, this study aims to develop and provide initial psychometric evidence for an instrument measuring the implementation of local potential-based School-Based Management in Maluku. The psychometric evidence includes content validity, internal consistency, sampling adequacy for factor analysis, and the empirical factor structure obtained through exploratory factor analysis. The findings are expected to provide a foundation for subsequent instrument refinement and large-scale validation studies.

METHOD

1. Research Design

This study employed an instrument development and preliminary validation design adapted from El-Hamamsy et al. (2022). The procedure comprised five sequential stages: (1) construct conceptualization and blueprint development, (2) item development, (3) expert-based content validation, (4) empirical pilot testing, and (5) evaluation of reliability and exploratory factor structure. Content evidence was established before empirical psychometric evaluation, and Exploratory Factor Analysis (EFA) was used to investigate the instrument's internal structure as preliminary construct-validity evidence rather than to confirm a predetermined model. The overall research procedure is illustrated in Figure 1, showing the sequential stages undertaken in developing and preliminarily validating the School-Based Management implementation instrument.

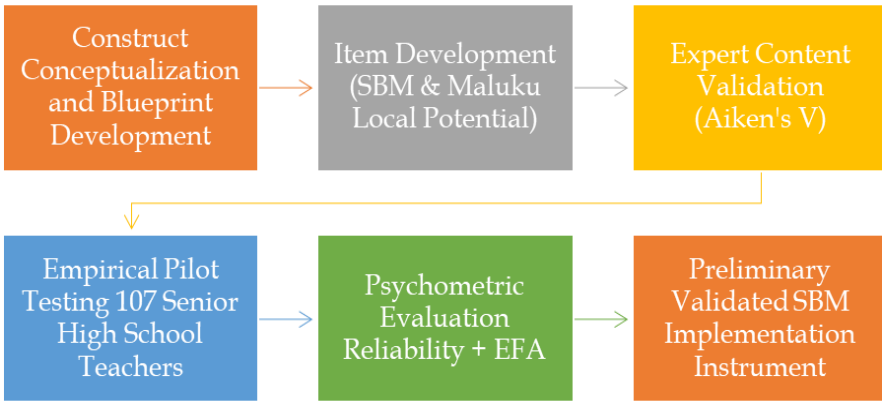


Figure 1. Research Procedure of SBM Instrument Development and Preliminary Validation

2. Construct Conceptualization and Blueprint Development

Construct conceptualization drew on core School-Based Management principles, school

service management, and the need to integrate Maluku's local potential. School autonomy, leadership, stakeholder participation, transparency, accountability, and quality assurance were extended into broader operational domains and supplemented by flagship school programs and contextual characteristics. This process produced 15 preliminary dimensions organized into three conceptual domains: SBM governance, school service management, and contextual school development. These domains guided construct coverage and item generation, not a predefined empirical factor structure. Tables 1 and 2 present the conceptual framework and the resulting 50-item blueprint.

Table 1. Conceptual Framework of the SBM Instrument

Conceptual Domain	Dimensions
SBM Governance	School Autonomy; Principal Leadership; Community Participation; Transparency; Accountability; Quality Assurance
School Service Management	Curriculum Management; Student Affairs; Facilities and Infrastructure; Financial Management; Public Relations; School Administration; Guidance and Counseling
Contextual School Development	Flagship Programs; Maluku Local Potential

Table 2. Instrument Blueprint

Dimensions	Indicator	Item Numbers
School Autonomy	School authority in decision-making	1–4
Principal Leadership	Participatory leadership and instructional supervision	5–8
Community Participation	Partnerships with school committees, parents, and alumni	9–12
Transparency	Openness of school information	13–16
Accountability	Accountability for school programs	17–20
Quality Assurance	Continuous quality improvement	21–24
Curriculum Management	Curriculum management	25–27
Student Affairs	Student development and services	28–30
Facilities and Infrastructure	Management of school facilities	31–33
Financial Management	Budget and financial management	34–36
Public Relations	School–community relations	37–39
School Administration	Administrative management	40–41
Guidance and Counseling	Guidance and counseling services	42–43
Flagship Programs	Distinctive school programs	44–46
Local Potential of Eastern Indonesia	Integration of local potential into school management	47–50

3. Item Development and Response Scale

The 50 items represented school autonomy, leadership, community participation, transparency, accountability, quality assurance, major school service areas, flagship

programs, and Maluku's local potential, including contextual learning, cultural heritage, environmental sustainability, maritime resources, social and religious tolerance, geographical conditions, resource limitations, and community networks. All items used a four-point Likert scale from 4 (strongly appropriate) to 1 (not appropriate), excluding a neutral midpoint, and were submitted to expert review before pilot testing.

4. Content Validation

Content validity was evaluated by four experts: one Biology Education academic from western Indonesia with teaching-learning expertise and three academics from Maluku with knowledge of the regional educational context and local potential. Each item was rated on a four-point scale for construct alignment, wording clarity, language appropriateness, and suitability for senior high schools in Ambon City. Item-level content validity was quantified with Aiken's V, and quantitative results together with qualitative feedback informed decisions to retain, revise, or reconsider items before empirical testing.

Aiken's V was calculated using the following equation:

$$V = \frac{\sum s}{n\,(c-1)}$$

where:

$s = r - l_o$

with:

r : rating assigned by each expert,
l_o : lowest possible rating,
n : number of experts,
c : number of response categories.

5. Participants and Pilot Testing

The preliminary empirical evaluation involved 107 senior high school teachers who completed the 50-item instrument based on their experiences and observations of school management. The dataset was used to assess internal consistency, factorability, and the underlying factor structure. Because this was an exploratory pilot with a limited sample, the factor-analytic findings were treated as preliminary and require replication with larger, independent samples.

6. Data Analysis

Data were analyzed in jamovi version 2.7 using the psych package. Internal consistency was evaluated with Cronbach's alpha and item-rest correlations. Factorability was assessed using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. EFA used minimum residual (minres) extraction with oblimin rotation because school-management dimensions were expected to correlate; loadings >= 0.40 were interpreted as meaningful. Factor retention considered eigenvalues, the scree plot, parallel analysis, and substantive interpretability, and the factor-loading table reports each item's dominant loading while notable cross-loadings are discussed in the text.

RESULTS AND DISCUSSION

Results

1. Instrument Development

The conceptual development process produced 15 preliminary dimensions and 50 items covering SBM governance, school service management, flagship programs, and Maluku's local potential. These dimensions served as the initial framework for construct coverage rather than as a fixed empirical structure; the number of factors was determined from

observed item relationships through EFA.

2. Content Validity

Four-expert content validation produced Aiken's V values from 0.667 to 1.000 (mean = 0.877). Item 9 had the lowest value (0.667), while several items reached 1.000. Although agreement varied across items, all items showed acceptable content validity and were retained for empirical evaluation.

3. Reliability Analysis

Responses from 107 teachers across 50 items yielded Cronbach's alpha = 0.944, indicating excellent overall internal consistency. Most item-rest correlations were >= 0.30, but Items 7, 29, 30, 31, and 45 were below this criterion, showing that the high overall alpha did not eliminate the need to examine item performance and internal structure.

4. Suitability for Factor Analysis

The overall KMO was 0.675 and Bartlett's Test of Sphericity was significant (chi-square = 7,722, df = 1,225, p < .001), supporting factor analysis. Because the KMO indicated adequate rather than strong sampling adequacy, the EFA findings were interpreted cautiously as preliminary internal-structure evidence.

5. Exploratory Factor Analysis

EFA using minres extraction and oblimin rotation identified a six-factor solution explaining 68.4% of the total variance. The 15 conceptual dimensions therefore did not appear as 15 separate empirical factors; instead, items from different theoretical dimensions clustered within shared latent factors, indicating empirical interrelationships among SBM components in Maluku.

6. Eigenvalues and Explained Variance

The factor retention decision was determined based on initial eigenvalues, parallel analysis, and scree plot examination. The first six factors demonstrated initial eigenvalues above the recommended threshold of 1.00, with values of 14.962, 7.803, 4.572, 1.785, 1.417, and 1.120, respectively. In contrast, Factor 7 produced an eigenvalue of 0.884, indicating that it did not meet the criterion for retention. Parallel analysis confirmed the six-factor solution, as the observed eigenvalues remained higher than the simulated eigenvalues up to the sixth factor. Additionally, the scree plot showed a clear point of inflection after the sixth factor, supporting the decision to retain six factors. Based on the convergence of these statistical criteria and the theoretical interpretability of the factors, six factors were retained as the most appropriate structure. Collectively, the retained factors explained 68.40% of the total variance, indicating that the extracted factor structure adequately represented the underlying dimensions of the instrument (Table 3 and Figure 2).

Table 3. Initial Eigenvalues and Variance Explained by the Six-Factor Solution

Factor	Initial Eigenvalue	SS Loadings	Explained Variance (%)	Cumulative Variance (%)
1	14,962	9,86	19,73	19,73
2	7,803	7,49	14,98	34,71
3	4,572	6,15	12,29	47,00
4	1,785	4,16	8,33	55,33
5	1,417	3,42	6,85	62,18
6	1,120	3,11	6,22	68,40

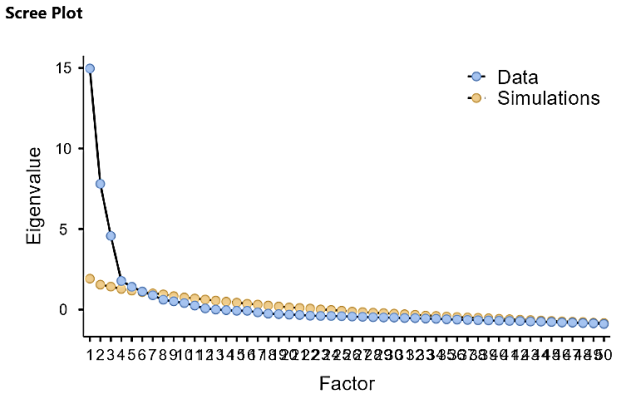


Figure 2. Scree Plot for Determining the Number of Retained Factors

7. Factor Loadings

Most items had primary loadings >= 0.40; 48 of 50 met the criterion, whereas Items 3 and 20 did not (Table 4). Factor 1 contained 16 items and Factor 6 contained three. Cross-loadings were observed for Items 11, 15, 18, 22, 25, 27, and 42; notably, Item 27 loaded 0.507 on Factor 1 and 0.493 on Factor 3, while Item 42 loaded 0.497 on Factor 4 and 0.473 on Factor 5. These patterns indicate overlap among some latent dimensions. Because this is an initial validation based on one sample, Items 3 and 20 were not removed automatically but were retained as candidates for further evaluation using their theoretical relevance, content validity, and performance in larger independent samples.

Table 4. Primary Factor Loadings of Individual Items

Factor	Items with Primary Loadings	Loading Range	Number of Items
F1	2, 8, 9, 10, 11, 12, 15, 16, 25, 26, 27, 37, 38, 39, 46, 47	0.404–0.991	16
F2	13, 17, 18, 22, 24, 33, 34, 35, 36, 40, 41	0.480–0.855	11
F3	1, 7, 14, 21, 29, 48, 49, 50	0.670–0.971	8
F4	4, 5, 6, 23, 42	0.408–0.904	5
F5	19, 30, 31, 32, 43	0.423–0.611	5
F6	28, 44, 45	0.463–0.894	3
< Cut-off	3, 20	< 0.40	2

8. Summary of Psychometric Evidence

Taken together, the results provide converging preliminary psychometric evidence: satisfactory content validity (mean Aiken's V = 0.877), excellent overall internal consistency (Cronbach's alpha = 0.944), adequate factorability (KMO = 0.675; Bartlett's p < .001), and a six-factor exploratory structure explaining 68.4% of the variance. Forty-eight items met the loading criterion of 0.40, while Items 3 and 20 require further evaluation and several items showed cross-loadings. These findings support continued development of the instrument while also showing that its internal structure and individual item performance remain provisional rather than final. To provide an integrated overview of the preliminary psychometric evidence, the main findings from content validity, reliability analysis, factorability assessment, and exploratory factor analysis are summarized in Table 5.

Table 5. Summary of Preliminary Psychometric Evidence of the SBM Instrument

Evaluation Aspect	Statistical Procedure	Result	Interpretation
Content validity	Aiken's V	0.667–1.000 (Mean = 0.877)	Satisfactory content validity
Internal consistency	Cronbach's Alpha	α = 0.944	Excellent reliability
Sampling adequacy	KMO Measure	0.675	Adequate for factor analysis
Correlation structure	Bartlett's Test	p < .001	Suitable for factor analysis
Factor structure	Exploratory Factor Analysis	6 factors	Explained 68.4% variance
Item retention	Factor loading	48 items ≥ 0.40	Acceptable item performance

Discussion

1. Content Validity and Internal Consistency of the Instrument

Expert review provided strong preliminary content-validity evidence (mean Aiken's V = 0.877; range = 0.667-1.000), while showing that agreement varied across items. Expert evaluation is essential for ensuring conceptual relevance, clear wording, and adequate construct representation before empirical testing (Tajuddin et al., 2025). Because an aggregate coefficient can conceal weaker individual items, content validity should be interpreted at item and domain levels rather than as a single global indicator (Noviana et al., 2023). Retaining all 50 items for pilot testing was therefore appropriate at this stage, where expert-based content evidence and empirical internal-structure evidence play complementary roles in iterative instrument development (El-Hamamsy et al., 2022).

The instrument also showed excellent overall internal consistency (Cronbach's alpha = 0.944), but alpha is an aggregate index and should not be interpreted alone (McNeish & Dumas, 2025). Items 7, 29, 30, 31, and 45 had item-rest correlations below 0.30, demonstrating that a high total-score reliability coefficient can coexist with weaker individual items. Overall reliability should therefore be interpreted alongside item characteristics and factor structure with reliability for each factor or subscale evaluated after the factor composition becomes more stable (Freed et al., 2022).

2. Data Suitability and the Empirical Factor Structure

The KMO value of 0.675 and significant Bartlett's Test indicated that the correlation matrix was adequate for EFA, although the KMO did not reflect a particularly strong common-variance structure. EFA quality depends on the correlation matrix, sampling adequacy, extraction and rotation procedures, and factor-retention criteria (Goretzko et al., 2021). Because several items also showed relatively low individual Measures of Sampling Adequacy, the solution should be evaluated using multiple indicators, including item quality, factor loadings, correlation patterns, and substantive interpretability rather than the overall KMO alone (Ferrando & Lorenzo-Seva, 2018).

The six-factor solution explained 68.4% of the variance and was more parsimonious than the original 15 conceptual dimensions. Such differences are common in multidimensional

instrument development because empirical relationships may reorganize theoretically distinct categories (Freed et al., 2022). The 15 dimensions were designed to ensure broad coverage of SBM governance, school services, flagship programs, and Maluku's local potential, whereas internal-structure analysis evaluates how those items cluster in the target population. The discrepancy therefore does not imply that the blueprint failed; conceptual coverage and empirical structure provide distinct but complementary evidence (El-Hamamsy et al., 2022).

The distinction between the 15 conceptual dimensions and six empirical factors is important. The preliminary dimensions were intended to secure comprehensive construct coverage before empirical testing, while EFA examined how relationships among the items emerged in the target population. Educational instrument development commonly begins with a broad theoretical framework and then evaluates whether the observed measurement structure supports or reorganizes that framework (El-Hamamsy et al., 2022). Thus, the six-factor result should be interpreted as empirical restructuring of the initial blueprint rather than as evidence that the conceptual framework was unsuccessful.

Parallel analysis and the scree plot supported retaining six factors rather than imposing the original 15 dimensions. Appropriate factor retention is critical because over- or under-extraction can distort the latent structure, and data-driven criteria provide a stronger basis than a single rule (Haslbeck & Van Bork, 2024; Knekta et al., 2019). The resulting clustering can be interpreted as an empirical reorganization of interrelated SBM functions, provided the solution remains substantively meaningful. Nevertheless, EFA supplies only preliminary evidence; the six-factor structure should be replicated and refined with larger, independent samples before being treated as a stable measurement model.

3. Item Evaluation, Cross-Loadings, and the Preliminary Factor Structure

Forty-eight items achieved primary loadings >= 0.40, while Items 3 and 20 did not. Their lower loadings warrant attention, but removal should not be based on one EFA when the items may still contribute to conceptual coverage. In preliminary instrument development, item refinement is iterative and should integrate content validity, item characteristics, and repeated psychometric testing with independent samples (El-Hamamsy et al., 2022).

Several cross-loadings also showed that factor boundaries were not fully distinct, particularly for Items 27 and 42. Such overlap is theoretically plausible because SBM functions as an integrated organizational system in which leadership, participation, transparency, accountability, program management, resource use, and local context can intersect. Item 45 further illustrates the need for integrated interpretation: despite relatively low item-rest correlation and MSA, it loaded relatively strongly on one factor. Cross-loadings and discrepant indices should therefore guide refinement or reassignment rather than automatic deletion, consistent with the view that educational measurement quality should be judged from multiple sources of statistical and substantive evidence (Brown, 2022).

4. Contextual Contribution of Maluku's Local Potential

A central contribution of the instrument is the integration of Maluku's local context into the SBM construct. Alongside autonomy, leadership, transparency, accountability, and school service management, the items address culture, natural and maritime environments, social and religious tolerance, socio-geographical conditions, resource limitations, contextual learning, and community networks. This extends SBM assessment beyond administrative governance by examining how schools connect management practices with local needs, opportunities, and resources.

Place-based education supports connecting educational practice with local communities,

environments, and issues that are meaningful in students' everyday lives Hernandez et al. (2022), while secondary-school research emphasizes contextual experience as an integral part of educational design (Pradana, Nurdiana, et al., 2026). Reliance on generalized frameworks alone may reduce contextual relevance when local knowledge and community perspectives are overlooked (Pradana, Sianturi, et al., 2026). Indigenous and community-based knowledge can also contribute perspectives not fully represented in dominant formal systems (Pradana et al., 2025). These considerations support treating local context as substantive measurement content rather than as supplementary background.

Broader educational research likewise identifies contextual knowledge as important for implementing practice in authentic settings (Budiman et al., 2020). Contextual knowledge shapes preservice teachers' evaluation and planning, and the TPACK literature continues to emphasize that educational practice is situated within social, organizational, and technological environments (Foulger et al., 2021; Mishra et al., 2023). In this study, Maluku's local potential extends rather than replaces core SBM principles. The EFA finding that local-context items did not form a completely independent factor suggests, provisionally, that local potential may operate as a cross-cutting dimension embedded in leadership, programs, community relations, and broader management. This contextual integration constitutes the instrument's main novelty and should be preserved during subsequent refinement.

The contextual contribution should remain central during subsequent refinement even if the empirical factor structure changes. The instrument's novelty lies in extending conventional SBM measurement to include the realities of an archipelagic region (local culture, maritime resources, geographical conditions, resource constraints, and community networks) so that governance is assessed together with the context in which it is enacted. This approach provides a basis for context-sensitive educational management measures that may later be adapted to other regions with distinctive sociocultural and geographical characteristics.

5. Implications, Limitations, and Directions for Further Validation

Overall, the study provides preliminary support for an SBM instrument integrating Maluku's local potential through satisfactory content validity, high overall internal consistency, an adequate factorable correlation matrix, a six-factor solution supported by parallel analysis, and factor loadings above the initial criterion for most items. However, the instrument has not reached a final form: the sample of 107 teachers is limited relative to a 50-item instrument, restricting generalizability and requiring replication of the six-factor structure.

Two items had loadings below 0.40 and several showed cross-loadings, indicating that some factor boundaries remain unclear. Future studies should re-examine item wording, substantive relevance, loading patterns, and content representation before deletion decisions, and should use larger independent samples to test whether the empirical structure is stable rather than sample-specific.

Future research should therefore use larger, independent samples to determine whether the six-factor structure can be replicated. Independent replication is necessary to distinguish a stable measurement pattern from a structure that may be specific to the present sample and to provide a stronger basis for subsequent factor-level reliability analysis and confirmatory testing.

After the factor composition becomes more stable, reliability should be estimated separately for each factor because the reported alpha of 0.944 reflects the total 50-item instrument; factor-level estimates provide more specific evidence for multidimensional

measures (Cheung et al., 2026). Confirmatory Factor Analysis should then test the refined structure in an independent sample after the exploratory model has achieved sufficient empirical and substantive stability (Sureshchandar, 2023). Until those steps are completed, the instrument is best regarded as a comprehensive preliminary framework with potential to become a context-sensitive SBM evaluation tool across diverse local educational settings.

CONCLUSION

This study developed a context-sensitive instrument for assessing School-Based Management (SBM) implementation by integrating the local potential of Maluku into the measurement framework. The findings provide preliminary psychometric evidence supporting the instrument, including satisfactory content validity, excellent internal consistency, and an interpretable six-factor exploratory structure. Although the empirical structure differed from the fifteen conceptual dimensions initially proposed, the results indicate that multiple aspects of SBM are empirically integrated when implemented within the educational context of Maluku.

Beyond providing an initial measurement tool, this study contributes to the development of contextually grounded educational management instruments by demonstrating how local geographical, cultural, and community characteristics can be incorporated into SBM assessment. Nevertheless, the present findings should be regarded as preliminary because several items require further refinement and the factor structure has not yet been confirmed. Future studies should validate the instrument using larger and independent samples, evaluate subscale reliability, and employ Confirmatory Factor Analysis (CFA) to establish a more stable and generalizable measurement model before the instrument is applied in broader educational settings.

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