WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Developing a Framework for Cross-Cultural Leadership in the Context of DepEd Cotabato Division

Charovil C. Bayawan

Researcher,

ABSTRACT

This study explored the cultural leadership practices of school heads in the Division of Cotabato, focusing on their roles in fostering a culturally responsive school environment. Employing both Exploratory Factor Analysis (EFA) and Thematic Analysis, the research aimed to determine the key constructs and thematic patterns related to cultural leadership in schools. Initially, nine constructs were identified—culturally responsive leadership, culturally inclusive communication, cultural adaptability, inclusive leadership, inclusive communication, cultural awareness, cultural sensitivity, and diversity-enriched leadership. However, EFA results refined these into three core competencies: communication, adaptability, and flexibility. These three factors showed a significant positive correlation, indicating their strong interdependence in shaping effective cultural leadership. Thematic analysis of the narratives shared by school heads revealed four major themes in their leadership journey: Cultural Respect and Awareness, Culturally Responsive Leadership and Action, Inspiration and Motivation for a Culturally Responsive School, and Practical Implementation and Engagement with the Community. Additionally, school heads were found to play crucial roles in communicating a shared cultural vision, which was categorized into three key areas: Awareness and Understanding of Cultural Diversity, Practical Implementation of Cultural Responsiveness, and Creating an Inclusive and Equitable Learning Environment. The study underscores the importance of cultural leadership as a multifaceted competency that supports inclusive education. A dissemination plan was also developed to share the study's findings with relevant stakeholders. These findings offer valuable insights for strengthening leadership strategies that promote equity, respect for diversity, and culturally inclusive practices in educational institutions.

INTRODUCTION

Leaders form good followers through developing a culture where everyone might have the sense of belongingness. Everyone in the organization is equal and humane in decision-making. Culture is what holds in establishing a good relationship. It is reasonable in an organization such as in the Department of Education to retain teachers' stay and discharge their duties and responsibilities.

In Carvajal et al. (2024)'s study, it was said that the leaders must be visionary and capable of collaborating with others. They encourage local talent and foster an inclusive cultural policy. Whereas Ahsan (2024) validated that leaders need to foster a culture of learning which would increase the involvement of employees. This means that synergy among leadership development and transformational leadership results in culture of excellence (Fenech et al., 2024).

One of the cultures of leadership is constructing values. This continues the organization's pursuit of change (Chimakati & Macharia, 2024; Prasetya & Zaakiyyah, 2024). There are four values that dominated leaders in Singapore: allocation of resources; gearing for work in the 21st century; ecological leadership, and putting into action various leadership models (Tan, 2024). All of which managed complex needs and expectations.

There is a need for a holistic culturally responsive leadership framework that is needed in this research (Cheng, 2024; Tomolujo, 2024). While there are already some leadership models, though each targeting other competencies (Groenewald et al., 2024). There is no certain framework for the school leaders of the Province of Cotabato when it comes to cultural leadership. Developing one will make schools a haven for school leaders who may motivate teachers.

Moreover, it may strengthen the ability of the administrators to respond effectively to diverse people in the organization. Observing the real essence of cultural leadership will benefit teachers to appreciate their work. The framework to be developed is context-specific, thus, it may help educational outcomes as a whole.

Research Questions

This study was conducted to develop a framework for cross-cultural leadership in the context of DEPED Cotabato Division.

Phase 1

1.What are the cross-cultural leadership constructs in the contexts of DepEd Cotabato Division?

2.What model on cross-cultural leadership could be developed for DepEd Cotabato Division?

Phase 2

1.What dissemination plan can be proposed based on the findings of the study?

METHODOLOGY

This chapter provided an overview of the method used and the data gathering procedures.

Research Design

A qualitative-narrative research design was used in this phase. It was a methodology for studying people, cultures, and societies by eliciting and analyzing stories. It involved thinking about and studying experiences through a narrative lens. Instead of focusing on just the actual words used during an interview, the narrative analysis also allows for a compilation of data on how the person expressed themselves (NIgar, 2020), what language they used when describing a particular event or feeling, and the thoughts and motivations they experienced. A narrative analysis will also consider how the research participants constructed their narratives (Chu et al., 2020).

This study was qualitative since it dives into the narratives of the school heads as they reflect their capability in promoting culturally responsive leadership in the Schools Division of Cotabato. In the same manner, their responses provided a deeper understanding of how this practice could lead to inclusivity in the school setting. Meanings out of their responses were analyzed thematically.

This study used the quantitative approach, in particular this was employed the cross-sectional survey research design. Quantitative used to observe events that affect a particular group of sample population. It collected numerical data and statistically analyzed to aggregate the data. At one hand, cross-sectional research design purposely provides information on one population for one or more variables at a specific point in time. It often provides correlative information about certain variables and can lead researchers to further study variable relationships (Maier et al., 2023; Wang & Cheng, 2020).

On the other hand, quantitative was applied through statistical analysis. The data was gathered through a survey questionnaire where the respondents will have to respond to each statement. In this regard, the constructs of cross-cultural leadership in the contexts of DepEd Cotabato was further explored through the development of a model.

Research Participants

The respondents of the study were the school heads. They were at least the Teacher In-charge, Head Teacher, and or School Principal. The same approach was employed for the qualitative phase of the study.

Congressional District	Population	Sample Size
District 1	229	144
District 2	249	152
District 3	268	159
Total	746	455

Research Instrument

The researcher had a set of guiding questions but allowed flexibility for participants to express themselves fully. This enabled a deep exploration of participants' stories in their own words.

The researcher used the survey questionnaire. A Likert Scale used to range from 1 (Strongly Disagree) to 5 (Strongly Agree), allowing the respondents to the intensity of their agreement or disagreement in each statement. In generating the items, it began with theoretical derivation. This explained that thorough readings and understanding of the previous studies would substantiate the predetermined constructs.

Data Analysis

Thematic Analysis is a technique for finding, analyzing, and reporting patterns (themes) in data. It is one of the most popular techniques used in qualitative research due to its flexibility and ease of use. Themes are patterns in the data that reflect something significant about the research question and represent some degree of meaning in the dataset. These themes derive from close reading and coding of the data, frequently dependent on the researcher's judgment about what is important (Kiger & Varpio, 2020).

To respond to the first research question, the researcher applied the Exploratory Factor Analysis (Alavi et al., 2020; Steiner & Grieder, 2020). Applying the **KMO and Bartlett's Test**, the sample size adequacy is sufficiently strong for factor analysis and to test its appropriateness (Thao et al., 2022). In confirming the factor structure derived via EFA, the **Confirmatory Factor Analysis** was utilized to try out the pre-established model/framework as per the literature (Alavi et al., 2020).

RESULTS AND DISCUSSIONS

This chapter presents the results and discussions of the study, highlighting the key findings derived from the data collected. It interprets these results in the context of existing literature, providing insights into the implications for practice and future research.

Phase 1

Cross-Cultural Leadership Constructs in the Context of DepEd Cotabato Division

KMO and Bartlett's Test

The table shows that the KMO of sampling adequacy of .865 reveals that a partial correlations among variables are relatively low, and therefore the data is highly suitable for factor analysis. A high KMO value suggests that the patterns of correlations are compact enough to yield distinct and reliable factors.

On the other hand, Bartlett's Test of Sphericity tests the null hypothesis that the correlation matrix is an identity matrix. The results show a Chi-Square value of 26,857.399, with a significance level (p-value) of .000, indicating that the result is statistically significant. This means that the correlations between variables are sufficiently large for Principal Component Analysis, and the data does not form an identity matrix. These results imply that your dataset is appropriate for dimensionality reduction and factor extraction.

KMO and Bartlett's Test

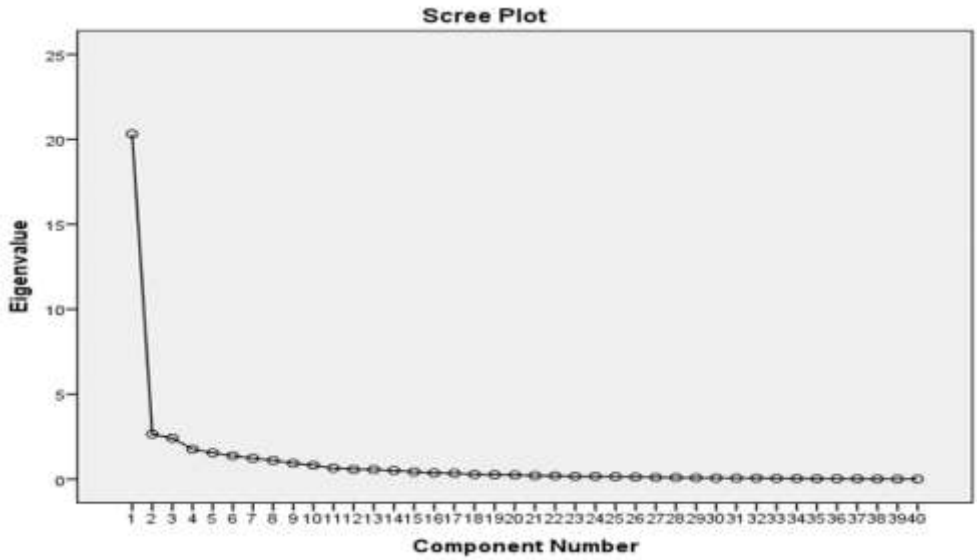
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	26857.399
	df	780
	Sig.	.000

The Scree Plot

The Scree Plot shows that the elbow appears to occur after the second or third component, meaning that these components explain the majority of the variance in the dataset. The eigenvalue drops sharply from Component 1 to Component 2, and then gradually flattens, suggesting that only a few components capture the essential structure of the data. Components after this point contribute increasingly less and can be considered as capturing random noise or minor variance.

This graphical interpretation supports the idea that the data can be effectively reduced to about 2 or 3 components without significant loss of information. This reduction simplifies further analysis, improves computational efficiency, and makes the results more interpretable—especially useful when dealing with large datasets with many variables.

The Rotated Component Matrix



The Rotated Component Matrix from the Principal Component Analysis (PCA) reveals how the original variables load onto eight extracted components after Varimax rotation. Strong factor loadings (typically above 0.4) suggest which variables group together under each component. For instance, VAR00035, VAR00036, and VAR00040 load heavily on Component 1, while VAR00008, VAR00015, and VAR00014 load significantly on Component

2, indicating distinct clusters of related variables. The rotation method enhances interpretability by clarifying which variables are most representative of each underlying factor. These findings are that the data's complexity can be reduced into eight distinct latent dimensions or constructs.

Rotated Component Matrix [a]

	Component							
	1	2	3	4	5	6	7	8
VAR00035	.891							
VAR00036	.791							
VAR00040	.732							
VAR00039	.732							
VAR00037	.685							
VAR00027	.655				.417			
VAR00030	.543							
VAR00028	.471	.417						
VAR00008		.801						
VAR00015		.767						
VAR00014		.760						
VAR00013		.669						
VAR00029	.445	.624						
VAR00011		.589	.575					
VAR00012		.576			.426			
VAR00016		.528			.451			
VAR00026		.478						
VAR00034			.921					
VAR00033	.461		.765					
VAR00010			.743					
VAR00002			.642				.516	
VAR00021			.622		.486			
VAR00020			.598					
VAR00019		.479	.549			.410		
VAR00032		.435	.529			.473		
VAR00024				.846				
VAR00023				.827				
VAR00004				.652				
VAR00022				.605				
VAR00007				.553				
VAR00031	.425			.527				-.504
VAR00017					.798			
VAR00018					.568			

VAR00025	.447	.409			.524			
VAR00001						.629		
VAR00038						.618		
VAR00009								
VAR00006			.418				.699	
VAR00005				.411			.427	
VAR00003				.421				.705

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 21 iterations.

Total Variance Explained

The Total Variance Explained table shows that eight components were extracted using Principal Component Analysis (PCA), accounting for a cumulative 80.973% of the total variance in the data. Component 1 explains the largest share at 16.107%, followed closely by Component 2 at 15.935%, and Component 3 at 14.198%. Each subsequent component contributes progressively less, with Components 6 to 8 explaining smaller yet meaningful proportions of the total variance. This high cumulative percentage indicates a strong representation of the original data by the eight components.

Implications of this finding indicate that these eight factors well capture the dataset such that it can be reduced without losing much information. This proportion of explained variance is best suited for research and analysis because it enables researchers to analyze and interpret complex data with greater efficiency. It also warrants construct validity for grouped items with a sound base to construct models, surveys, or theoretical structures on the basis of these components. Ultimately, this helps determine patterns, themes, or underlying factors that play the most critical role in the data.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	6.443	16.107	16.107
2	6.374	15.935	32.041
3	5.679	14.198	46.240
4	4.667	11.668	57.907
5	3.598	8.994	66.902
6	2.153	5.381	72.283
7	1.743	4.357	76.640
8	1.733	4.333	80.973

Extraction Method: Principal Component Analysis.

Fit Indices of Seven-Factor Model of Cross-Cultural Leadership in the Context of DEPED Cotabato Division

The model fit indices for the seven-factor model of Cross-Cultural Leadership in the context of DepEd Cotabato Division reveal suboptimal model fit. The chi-square minimum value (CMIN) is 18.588, suggesting a significant difference between the observed and model-implied covariance matrices. The Comparative Fit Index (CFI) of .556, Tucker-Lewis Index (TLI) of .515, and Normed Fit Index (NFI) of .543 are all far below the commonly accepted threshold of .90 for good model fit. Additionally, the Root Mean Square Error of Approximation (RMSEA) is .197, which is considerably higher than the acceptable range of ≤ .08, indicating poor model fit. The Akaike Information Criterion (AIC) value is 12240.416, further suggesting that alternative models may yield better fit to the data.

The low fit indices indicate that the proposed seven-factor solution might not accurately represent the underlying dimensions of cross-cultural leadership for DepEd Cotabato Division leaders. It is essential to revisit the factor structure, possibly through additional exploratory factor analysis or model specification, in order to establish a more correct representation. The findings indicate the importance of having a culturally specific framework that better aligns with local leadership practice and contextual reality. Subsequent studies may concentrate on item refinement, eliminating duplicative items, or exploring alternative theoretical models that better fit the distinct multicultural context of Cotabato schools.

Based on Hu and Bentler (1999), values of CFI and TLI greater than .90 and RMSEA less than .08 are generally expected to represent acceptable fit, with lower values of them indicating misspecification of the model. In multicultural settings, researchers such as Cheung and Rensvold (2002) underscore the need to be culturally sensitive when building models, as those samples that are heterogeneous culturally may need to use adjusted leadership models for satisfactory model fit. In addition, Vandenberg and Lance (2000) support strict cross-validation and repeated model refinement when fit indices are less than acceptable levels.

Fit Indices of Seven-Factor Model of Cross-Cultural Leadership in the Context of DEPED Cotabato Division

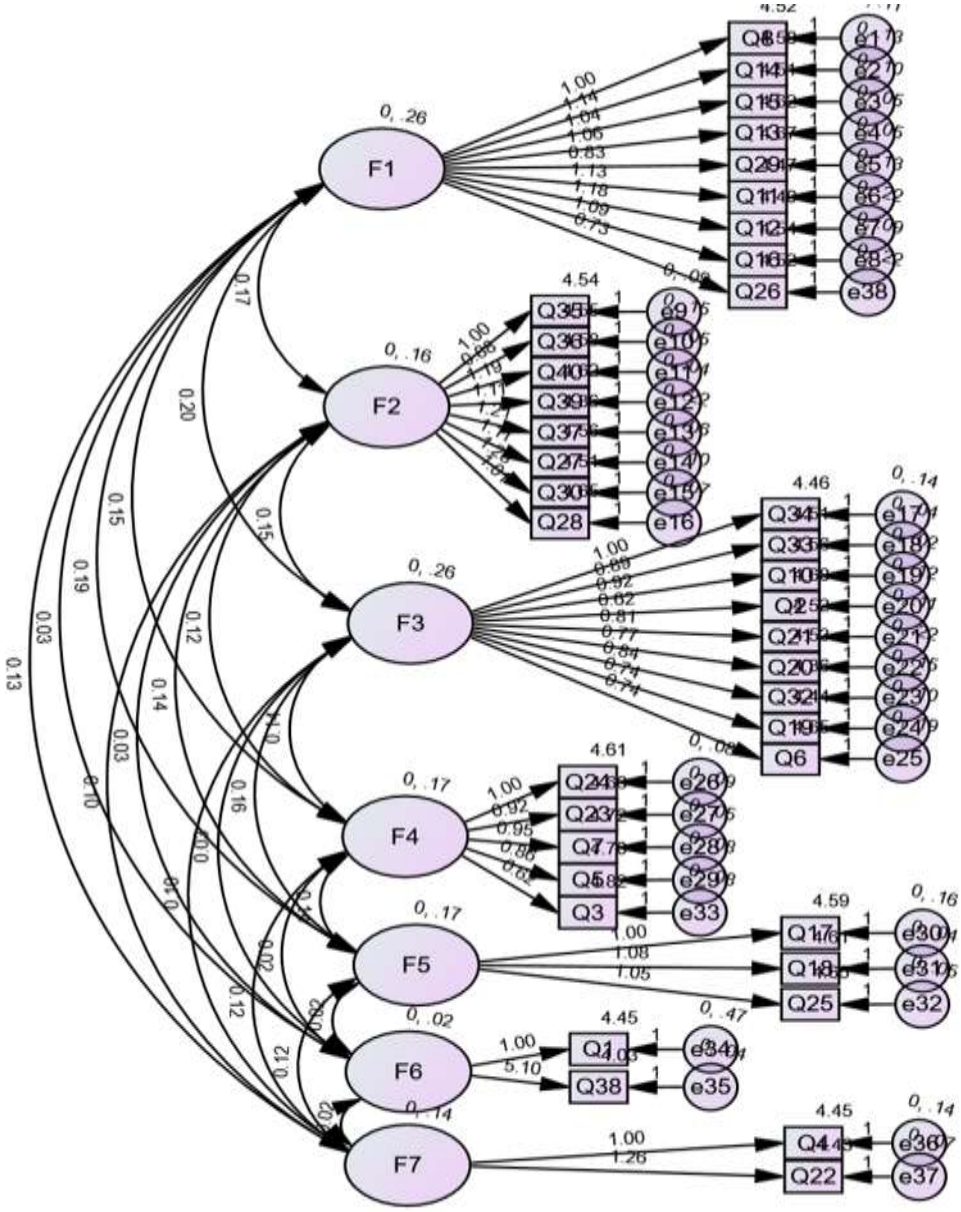
Fit Indices	Obtained Value
CMIN	18.588
Comparative Fit Index (CFI)	.556
Tucker-Lewis Index (TLI)	.515
Normed Fit Index (NFI)	.543
Root Mean Square Error of Approximation (RMSEA)	.197
Akaike Information Criterion (AIC)	12240.416

Seven-Factor Model of Cross-Cultural Leadership in the Context of DEPED Cotabato Division

Path diagram presents the seven-factor model of cross-cultural leadership using latent factors (F1 through F7) linked with respective observed measures (question items). Each of the factors has multiple observed measures with straight arrows signifying direct effects, standardized factor loadings being between nearly 0.73 and 1.26. Curved double-headed lines connecting latent factors depict correlations among factors, referring to intercorrelations across the dimensions. For example, F1 is positively correlated with F2 (0.17), F3 (0.20), and F4 (0.19), representing moderate relationships. Each of the observed variables is also linked with an error term (e.g., e11, e12) to reflect measurement error. This design captures that although each factor is meaningful in itself, they are moderately correlated with each other, representing the intricacy of cross-cultural leadership qualities among school leaders.

Inter-factor correlations indicate that cross-cultural leadership dimensions are not completely independent but instead mutually complementary in reality. The strength of correlations tends to be low to moderate, though, suggesting that though the constructs share some similarities, they also tap unique dimensions of leadership behavior in multicultural environments. These results prompt a tentative interpretation of the model, given the weak to moderate inter-correlations between factors that may represent a latent fragmentation of how cross-cultural leadership skills are conceptualized and practiced. Therefore, purification of the model by reducing redundant factors or defining distinctions might advance construct validity and better model fit.

Path diagrams are pictorial representations of hypothesized relationships in structural equation modeling (Byrne, 2016). Factor loadings of 0.70 and above are usually regarded as strong, but the existence of low-to-moderate inter-factor correlations, as seen, can be indicative of either substantive multidimensionality or model misspecification (Kline, 2016). Weak correlations among latent variables could be an indication to revisit the theoretical model or merge overlapping constructs, as argued by Hair et al. (2020). Additionally, in analyzing leadership behaviors when evaluating across many cultures, one must consider the contextual factors likely to weaken or reinforce associations among leadership competencies (Cheung & van de Vijver, 2020).



F1-Culturally Inclusive Education

F2-Culturally Responsive Leadership

F3-Cultural Adaptability

F4-Inclusive Leadership

F5-Inclusive Communication

F6-Cultural Awareness

F7-Commitment to Cultural Responsiveness

Phase 2

Dissemination Plan

The results of this study, particularly the strong positive correlations between Cultural Leadership, Communication, Adaptability, and Flexibility, will be disseminated through a multi-pronged approach to ensure broad access and engagement. Below is a detailed dissemination plan:

1. Research Report and Executive Summary

A final report presenting the results, including Pearson correlation coefficients and p-values, will be written and disseminated to stakeholders such as educational leaders, policymakers, and school administrators. An executive summary will be prepared for non-technical readers, distilling main findings and their practical implications for school leadership.

2. Academic Journals and Conferences

Findings of the study will be presented to the pertinent peer-reviewed journals in educational leadership and management. The findings will be presented in educational conferences at regional and global levels so as to provide feedback to the larger academic community and obtain further criticism.

3. Workshops for School Leaders

Professional development workshops and school leader workshops will be organized to enable school leaders to learn and implement the findings in their respective institutions. The workshops will emphasize how cultural leadership, communication, flexibility, and adaptability are interconnected and can be used to enhance school practice.

4. Policy Briefs

Policy briefs will be disseminated to national and local departments of education to contribute to decision-making. These briefs will emphasize the ways in which the patterns between cultural leadership, communication, flexibility, and adaptability can guide policy-making towards enhancing school leadership practices.

5. Partnerships with universities and educational institutes in order to integrate these findings into leadership training programs, enhancing the curriculum with real-world information about the value of cultural leadership and flexibility in schools.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions, and recommendations.

Summary of Findings

This study was carried out to determine the cultural leadership practices of school heads in the Division of Cotabato. Using the Exploratory Factor analysis and Thematic analysis, the following findings were drawn:

1. There are 9 constructs of cultural leadership in the Contexts of DepEd Cotabato Division namely the culturally responsive leadership, culturally inclusive communication, cultural adaptability, inclusive leadership, inclusive communication, cultural awareness, cultural sensitivity, and diversity-enriched leadership. However, after the Exploratory Factor Analysis, only 3 factors were retained and grouped. These are communication, adaptability, and flexibility.

2. Themes on the stories shared by the school heads on their journey in promoting a culturally responsive school environment are Cultural Respect and Awareness, Culturally Responsive Leadership and Action, Inspiration and Motivation for a Culturally Responsive School, Practical Implementation and Engagement with the Community.

3. Themes on the roles played by the school heads in communicating a shared cultural vision among teachers are Awareness and Understanding of Cultural Diversity, Practical Implementation of Cultural Responsiveness, and Creating an Inclusive and Equitable Learning Environment.

4. The path diagram revealed that each factor (F1–F7) had strong loadings on its associated observed indicators, while curved arrows showed low to moderate correlations among the latent constructs.

5. However, the overall model fit indices (e.g., CFI = .556, TLI = .515, RMSEA = .197) indicated that the model did not meet acceptable thresholds, suggesting poor fit between the data and the proposed factor structure. The relationships illustrated that while the factors were conceptually distinct, they also exhibited meaningful, though limited, interconnections.

6. A dissemination plan was developed based on the findings of the study.

Conclusions

Based on the findings of the study, several key conclusions were drawn regarding the cultural leadership practices of school heads in the Division of Cotabato. These conclusions are derived from both the exploratory factor analysis and thematic analysis, providing a comprehensive understanding of the role of cultural leadership in schools.

1. The study identified nine constructs of cultural leadership within the context of the DepEd Cotabato Division. However, the exploratory factor analysis revealed that only three factors—communication, adaptability, and flexibility—were retained as core competencies of cultural leadership.

2. There was a significant positive correlation among cultural leadership, communication, adaptability, and flexibility, indicating a high level of interdependence among these competencies.

3. The four key themes identified in the stories shared by school heads highlight the critical aspects of fostering a culturally responsive school environment, emphasizing respect, leadership, motivation, and community engagement.

4. The study emphasizes that school heads play a vital role in promoting cultural diversity awareness, implementing culturally responsive practices, and creating an inclusive and equitable learning environment through effective communication of a shared cultural vision.

5. The seven-factor model of cross-cultural leadership does not sufficiently capture the structure of leadership practices in the multicultural context of DepEd Cotabato Division.

6. Although the factors individually demonstrated adequate indicator loadings, the poor model fit indices and low inter-factor correlations suggest theoretical and empirical inconsistencies. This indicates that the cross-cultural leadership traits may either overlap significantly or require a reconceptualization that better reflects the realities of leadership in a culturally diverse educational environment.

Recommendations

This study recommends that:

1. It is suggested that leadership development programs and school heads prioritize these three main factors—communication, adaptability, and flexibility—when developing training modules and leadership development initiatives to increase school leaders' cultural responsiveness.

2. School heads need to prioritize building a culture that promotes collaboration and professional development on these aspects.

3. In order to reinforce the promotion of a culturally responsive climate, school heads must continue to exchange best practices and individual experiences. Holding forums and meetings where school heads can work together, and share effective strategies will disseminate these effective practices among schools.

4. It is recommended that school heads continue to prioritize cultural diversity in their leadership, ensuring that they model inclusive behaviors and encourage teachers to integrate culturally responsive practices into their teaching methods. This can be supported through continuous training on cultural awareness and equity.

5. Conduct a second Exploratory Factor Analysis (EFA) to determine redundant or poorly performing items and potentially merge overlapping factors to enhance model fit.

6. Reformulate survey questions to be more culturally relevant and specific to the local leadership situation, taking into account Indigenous and multicultural realities in Cotabato schools.

REFERENCES

Ahsan, M. J. (2024). Cultivating a culture of learning: the role of leadership in fostering lifelong development. *The Learning Organization*.

Alavi, M., Visentin, D. C., Thapa, D. K., Hunt, G. E., Watson, R., & Cleary, M. (2020). Exploratory factor analysis and principal component analysis in clinical nursing research: A methodological review. *International Journal of Nursing Studies*, 102, 103-482. https://doi.org/10.1016/j.ijnurstu.2019.103482

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). Routledge.

Carvajal, A. L. P., & Sanchez, R. D. (2024). Probing the Leadership Qualities of Local Chief Executives (LCEs) in Creating Competitive Creative Communities: Basis for Leadership Framework and Development Plan. International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR), 3(1), 380-400.Cheng, Y. C. (2024). A Typology of Multiple School Leadership. Education

Sciences, 14(1), 70. Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, 9(2), 233–255. https://doi.org/10.1207/S15328007SEM0902_5

Cheung, F. M., & van de Vijver, F. J. R. (2020). Strategies for strengthening cultural research. *Perspectives on Psychological Science*, 15(3), 544–556. https://doi.org/10.1177/1745691619897985

Chimakati, F. M., & Macharia, I. (2024). Fostering Innovation And Change Through Learning Culture Leadership: A Case Of Kenya Commercial Bank (Kcb) Of Kenya. African Journal of Emerging Issues, 6(6), 26-38. Chu, J., Li, Y., Zhang, Q., & Wang, K. (2020). Narrative analysis: A review of narrative research. *Journal of Advanced Nursing*, 76(11), 2908–2918. https://doi.org/10.1111/jan.14456

Groenewald, E., Groenewald, C. A., Cruz, R. A. D., Uy, F., Kilag, O. K., & Villaver Jr, M. (2024). Navigating Educational Leadership: Challenges, Styles, and Impacts–A Systematic Review. International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE), 1(2), 262-267.Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2020). *Multivariate data analysis* (8th ed.). Cengage Learning.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. https://doi.org/10.1080/10705519909540118

Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. *Medical Teacher*, 42(8), 846–854. https://doi.org/10.1080/0142159X.2020.1755030

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.

Maier, C., Laumer, S., & Eckhardt, A. (2023). Technostress in schools: A literature review and future research agenda. *Computers & Education*, 194, 104-661. https://doi.org/10.1016/j.compedu.2023.104661

NIgar, R. (2020). Narrative inquiry: A review article. *Journal of English Language and Literature*, 7(1), 81–86. https://doi.org/10.17722/jell.v7i1.331

Prasetya, Y. B., & Zaakiyyah, H. K. A. (2024). Building Values-Based Leadership in the Context of Knowledge Management and Information Technology to Support Sustainable Change in Organizational Culture. Journal of Contemporary Administration and Management (ADMAN), 2(1), 436-442.Steiner, D. D., & Grieder, S. (2020). Principal components analysis and exploratory factor analysis. In D. B. Flora (Ed.), *Statistical methods for psychology* (pp. 445–474). Routledge.

Tan, C. Y. (2024). Influence of cultural values on Singapore school leadership. Educational Management Administration & Leadership, 52(2), 280-303.Thao, D. T. P., Huong, N. T. T., & Phuong, N. T. M. (2022). Use of KMO and Bartlett's test in factor analysis. *Journal of Science and Technology*, 60(2), 131–140. https://doi.org/10.15625/2525-2518/15451

Tomoloju, O. A. (2024). Building Leadership Capacity: Embracing of Inclusive and Culturally Responsive Practices to Promote Succession and Sustainability of Principals in Arctic Canada.Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3(1), 4–70. https://doi.org/10.1177/109442810031002

Wang, W., & Cheng, Y. (2020). Cross-sectional studies: Strengths and limitations. *Chest*, 157(4), 1015–1016. https://doi.org/10.1016/j.chest.2020.01.026