



Research Article

The Relationship Between School Inclusion Practices and Social Adjustment Among Tinonanon Monubu Pupils: The Mediating Role of Sense of Belonging

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Abstract

This study examined the mediating role of sense of belonging in the relationship between school inclusion practices and social adjustment among 120 Grade 6 Tinonanon Monubu learners in public elementary schools in Arakan, North Cotabato. Guided by Inclusive Education, Belongingness, and Ecological Systems theories, the study employed a quantitative correlational design using Partial Least Squares Structural Equation Modeling (PLS-SEM). Results showed very high levels of school inclusion practices, sense of belonging, and social adjustment. While school inclusion practices did not significantly predict social adjustment directly ($\beta = 0.172$, $*p* = .083$), they significantly predicted sense of belonging ($\beta = 0.391$, $*p* < .001$), which in turn significantly predicted social adjustment ($\beta = 0.453$, $*p* < .001$). Sense of belonging also fully mediated the relationship between school inclusion practices and social adjustment ($\beta = 0.177$, $*p* = .006$), indicating that inclusive practices promote learners' social adjustment primarily by strengthening their sense of acceptance, connectedness, and belonging within the school community.

Keywords: school inclusion practices, sense of belonging, social adjustment, Indigenous learners, mediation analysis, PLS-SEM, Tinonanon Monubu learners, inclusive education.



1. Introduction

Globally, inclusive education has been widely promoted as a strategy to address educational inequities among marginalized populations. UNESCO (2021) reported that although enrollment rates of Indigenous learners in primary education have improved, approximately 45% of Indigenous pupils worldwide report feeling socially disconnected or insufficiently supported in mainstream schools. The United Nations Permanent Forum on Indigenous Issues (2022) further noted that disparities in school belonging and peer integration remain prevalent across Indigenous communities in both developed and developing nations. Social adjustment is particularly critical, as students who experience low belonging are significantly more likely to demonstrate withdrawal behaviors and reduced academic engagement (Allen et al., 2021). Gopalan and Brady (2022) emphasized that students with weak school belonging show higher risks of social and emotional difficulties, reinforcing the importance of examining psychological pathways within inclusive education frameworks.

In the Philippine context, inclusive education is institutionalized through DepEd Order No. 21, s. 2022, which mandates equitable and learner-centered school environments. The Indigenous Peoples Education (IPEd) Program also promotes culturally responsive instruction for Indigenous communities (DepEd, 2022). At the local level, despite these mandates, implementation challenges persist. Specifically, Tinonanon Monubu learners in the Municipality of Arakan continue to face challenges in social adjustment within mainstream schools. Indigenous Peoples Education (IPEd) reports note issues such as irregular attendance and limited classroom participation among IP learners (Department of Education [DepEd], 2022). In North Cotabato, disparities in educational participation among Indigenous communities remain evident (Philippine Statistics Authority [PSA], 2020). These conditions underscore the need to examine the influence of school inclusion practices on the social adjustment of Tinonanon Monubu learners.

In Region XII, particularly in the Municipality of Arakan, North Cotabato, Tinonanon Monubu learners comprise a substantial portion of the elementary school population, yet empirical research on their social experiences in mainstream classrooms remains limited. Although inclusive and culturally responsive school climates are linked to stronger social adjustment among marginalized learners (Florian & Black-Hawkins, 2021) and supportive classroom environments enhance peer relationships (Wang & Degol, 2021), localized evidence in Arakan is scarce. Furthermore, prior studies often examine inclusion practices and social adjustment as directly related constructs without testing mediating mechanisms (Gopalan & Brady, 2022). While sense of belonging is recognized as a key psychological factor connecting school climate to student outcomes (Allen et al., 2021), mediation analyses involving Indigenous learners remain limited (Korpershoek et al., 2020). Therefore, this

study seeks to examine the relationship between school inclusion practices and social adjustment of IP pupils, with particular emphasis on the mediating role of sense of belonging among Grade 6 Tinonanon Monubu learners in the Municipality of Arakan. By focusing on mediation analysis, the study aims to contribute empirical evidence explaining not only whether inclusion practices are related to social adjustment, but also how this relationship operates within an Indigenous educational context.

Theoretical Framework

This study is anchored on Inclusive Education Theory (Ainscow, 2020), Belongingness Theory (Baumeister & Leary, 1995), and Ecological Systems Theory (Bronfenbrenner, 1979). Inclusive Education Theory emphasizes the creation of equitable, participatory, and culturally responsive learning environments that support the meaningful participation of all learners, particularly those from marginalized groups. Research indicates that inclusive school practices and culturally responsive pedagogy contribute to improved engagement and social outcomes among Indigenous learners (Florian & Black-Hawkins, 2021; UNESCO, 2023; Prehn et al., 2024).

The study also draws on Belongingness Theory, which posits that the need to belong is a fundamental human motivation influencing psychological and social functioning. In educational settings, students who experience acceptance and recognition are more likely to demonstrate positive social adjustment and well-being. Recent studies identify sense of belonging as a significant predictor of student engagement and adjustment outcomes (Allen et al., 2021; Gopalan & Brady, 2022). Accordingly, sense of belonging is examined as a mediating variable in this study.

Finally, Ecological Systems Theory explains that learners' development is shaped by interactions within their environments, particularly the school setting. Supportive school climates and inclusive peer environments have been shown to promote positive social behaviors and adjustment (Wang & Degol, 2021; Longobardi et al., 2022). Within this framework, school inclusion practices serve as environmental influences that foster learners' sense of belonging, which in turn enhances their social adjustment. Taken together, these theories support the study's proposed mediation model, wherein school inclusion practices influence social adjustment through learners' sense of belonging among Grade 6 Tinonanon Monubu learners.

Statement of the Problem

The purpose of this study was to determine the mediating effect of sense of belonging on school inclusion practices and social adjustment of Tinonanon Monubu pupils. In this study the researcher used survey questionnaire to answer the following research questions:

1. What is the level of School Inclusion Practices of pupils in terms of:
 - 2.1) Differentiated instruction;
 - 2.2) Personalized learning strategies;
 - 2.3) Equal classroom participation; and
 - 2.4) Inclusive teaching practices.
2. What is the level of Sense of belonging as perceived by pupils in terms of:
 - 1.1) Cultural identity support;
 - 1.2) Cultural expression encouragement;
 - 1.3) Self-identity confidence;
 - 1.4) Cultural recognition.
3. What is the level of Social adjustment of pupils in terms of:
 - 3.1) Peer acceptance;
 - 3.2) Social interaction skills;
 - 3.3) Emotional peer support; and
 - 3.4) Adjustment to school demands
4. Does sense of belonging significantly mediate the relationship between School Inclusion Practices and Social adjustment?

2. Materials and Methods

2.1 Research Design

This study employed a quantitative correlational research design with mediation analysis. Quantitative correlational research examines the direction and strength of relationships among variables without manipulating them (Creswell & Creswell, 2022). In this study, mediation analysis was utilized to determine whether sense of belonging significantly mediated the relationship between school inclusion practices and social adjustment of Indigenous Peoples (IP) pupils.

Guided by the study's conceptual framework (Figure 1), school inclusion practices served as the independent variable, social adjustment as the dependent variable, and sense of belonging as the mediating variable. The framework posits that school inclusion practices may directly influence the social adjustment of IP pupils and indirectly influence social adjustment through learners' sense of belonging. Accordingly, the study examined both the direct and indirect pathways among these variables to determine the extent to which sense of belonging explains the relationship between school inclusion practices and social adjustment. This design was appropriate because the primary objective of the study was to examine whether sense of belonging explained the effect of school inclusion practices on social adjustment. Since the variables were measured as they naturally occurred and were not experimentally manipulated, a correlational

approach with mediation analysis was suitable for testing both direct and indirect effects among the variables.

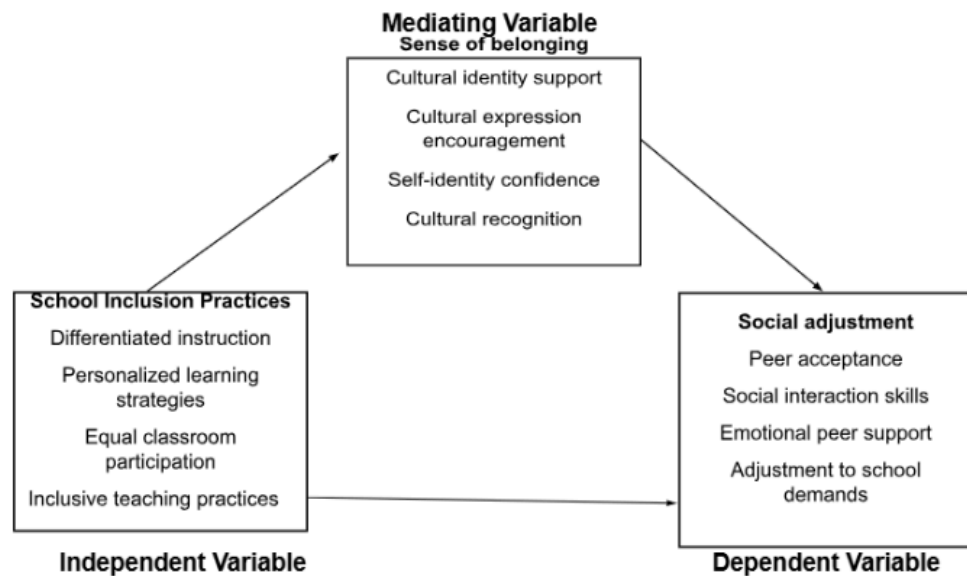


Figure 1. Conceptual Framework

2.2 Research Locale

The study was conducted in thirteen (13) selected public elementary schools in the Municipality of Arakan, North Cotabato. Arakan is an upland municipality in North Cotabato with a diverse population that includes several Indigenous Peoples (IP) communities, particularly the Tinonanon Monubu (National Commission on Indigenous Peoples [NCIP], 2021). Public elementary schools in the municipality serve learners from both lowland and upland barangays and implement inclusive and culturally responsive educational programs through the Indigenous Peoples Education (IPEd) framework (Department of Education [DepEd], 2022).

The municipality was selected as the research locale because it has a substantial population of Tinonanon Monubu learners. Thirteen (13) public elementary schools with identified Grade 6 Tinonanon Monubu pupils were included in the study. This setting provided an appropriate context for examining school inclusion practices, sense of belonging, and social adjustment among Indigenous learners, as well as the mediating role of sense of belonging in their relationship.

2.3 Research Participants

The respondents of this study were Grade 6 Tinonanon Monubu learners enrolled in selected public elementary schools in the Municipality of Arakan. A

total of one hundred twenty (120) identified learners participated in the quantitative phase of the study based on proportional stratified sampling allocation of Tinonanon Monubu learners across thirteen (13) identified schools. The inclusion criteria for the study were: (1) pupils who were currently enrolled in Grade 6 during the conduct of the study, (2) learners who were officially identified as Tinonanon Monubu based on school records or Indigenous Peoples (IP) profiling data, and (3) pupils enrolled in the selected public elementary schools within the Municipality of Arakan. Only Grade 6 learners were included to ensure uniformity in grade level and comparable school experiences. Excluded from the study were: (1) pupils from other grade levels (Grades 1–5), (2) learners who were not identified as Tinonanon Monubu, (3) Grade 6 pupils enrolled in schools outside the Municipality of Arakan, and (4) learners who were not officially enrolled during the data collection period. Below is the distribution of respondents per school is presented in the table below.

Table 1. Proportionate Stratified Sampling Distribution of Grade 6 Tinonanon Monubu Learners

#	School	Total Grade 6 Tinonanon Monubu Learners	Stratified Sample
1	Allab Elementary School	18	10
2	Dallag Elementary School	15	9
3	Ganatan Elementary School	13	8
4	Inamong Elementary School	16	9
5	Katindu Elementary School	19	10
6	Katipunan Central Elementary School	14	8
7	Kiatao Integrated School	17	9
8	Libertad Elementary School	18	10
9	Meocan Elementary School	16	9
10	Paco Paco Elementary School	17	9
11	Sinayawan Elementary School	19	10
12	Tumanding Elementary School	15	9
13	Valencia Elementary School	18	10
Total		215	120

2.4 Research Instruments

A structured survey questionnaire was adopted and modified to examine the relationship between school inclusion practices and social adjustment among Grade 6 Tinonanon Monubu learners and to determine the mediating role of sense of belonging. The instrument consisted of three sections corresponding to the study variables and was translated into Tagalog to ensure clarity and cultural appropriateness. The first section measured School Inclusion Practices, covering differentiated instruction, personalized learning strategies, equal classroom participation, and inclusive teaching practices. The items were adapted from Prehn et al. (2024), whose instrument demonstrated high reliability, with Cronbach's alpha coefficients ranging from .84 to .91 and an overall reliability of

$\alpha = .93$. The second section assessed Sense of Belonging, including cultural identity support, cultural expression encouragement, self-identity confidence, and cultural recognition. The items were also adapted from Prehn et al. (2024), with reported reliability coefficients ranging from .90 to .95 and an overall reliability of $\alpha = .96$.

The third section measured Social Adjustment, encompassing peer acceptance, social interaction skills, emotional peer support, and adjustment to school demands. The items were adopted and modified from Oni and Soji-Oni (2022), whose scale reported reliability coefficients ranging from .87 to .92 and an overall reliability of $\alpha = .94$. All items were rated using a five-point Likert scale: 5 – Strongly Agree, 4 – Agree, 3 – Neutral, 2 – Disagree, and 1 – Strongly Disagree., where higher scores indicated greater levels of school inclusion practices, sense of belonging, and social adjustment. Prior to data collection, the instrument underwent expert validation and pilot testing to establish its validity and reliability for the target population.

2.5 Data Collection

The study followed a systematic procedure to ensure ethical compliance and proper data collection. First, ethical clearance, adviser approval, and expert validation of the instrument were secured. Formal permission to conduct the study was then obtained from the Schools Division Superintendent (SDS), school heads, and the Tinonanon Monubu IP leader. Informed consent from parents or guardians and assent from the Grade 6 learners were likewise obtained. After securing all necessary approvals, the validated questionnaire was administered through Google Forms or printed copies. Completed questionnaires were retrieved, checked for completeness, encoded, and subjected to appropriate statistical analyses. The findings were then analyzed and interpreted based on the research objectives. Data collection was conducted from January to May 2026.

2.6 Data Analysis

The data gathered were encoded, screened, and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Descriptive statistics, specifically the mean and standard deviation, were used to determine the levels of school inclusion practices, sense of belonging, and social adjustment among Grade 6 Tinonanon Monubu learners. Mean scores were interpreted using a five-point Likert scale to describe the respondents' perceptions of each variable. To test the proposed mediation model, the data were analyzed using PLS-SEM. The measurement model was first evaluated through Cronbach's alpha, composite reliability, and average variance extracted (AVE) to establish internal consistency and convergent validity, while discriminant validity was assessed using appropriate validity criteria. The structural model was then examined by analyzing the path coefficients, coefficient of determination (R^2), effect sizes (f^2), and the significance of direct and indirect effects. The mediating role of sense of belonging in the relationship between school inclusion practices and social

adjustment was tested through the bootstrapping procedure with 5,000 resamples. All statistical tests were evaluated at the 0.05 level of significance.

2.7 Ethical Considerations

This study adhered to established ethical standards to protect the rights, dignity, and welfare of Grade 6 Tinonanon Monubu learners in the Municipality of Arakan. It aimed to generate valuable insights into school inclusion practices, sense of belonging, and social adjustment to support the development of culturally responsive and inclusive educational strategies. Prior to data collection, written informed consent from parents or guardians and assent from the learners were obtained after clearly explaining the study's purpose, procedures, voluntary nature, and the participants' right to withdraw at any time. Given that the respondents were minors and members of an Indigenous cultural community, the researcher exercised cultural sensitivity by securing approvals from the Schools Division Superintendent, school heads, and the recognized Tinonanon Monubu community leader, while ensuring that participation did not interfere with academic activities. The study involved only minimal risk, with participants free to decline or skip any question causing discomfort. Privacy and confidentiality were safeguarded through the use of participant codes, secure storage of data, and the presentation of findings in aggregate form. Fair participant selection was ensured through stratified random sampling, and the researcher upheld transparency, honesty, and integrity in all research procedures while maintaining continuous coordination with school and community stakeholders throughout the conduct of the study.

3. Results and Discussion

3.1 Level of School Inclusion Practices among Grade 6 Tinonanon Monubu Learners

Table 2 presents the level of school inclusion practices as perceived by Grade 6 Tinonanon Monubu learners in terms of differentiated instruction, personalized learning strategies, equal classroom participation, and inclusive teaching practices.

Table 2. Level of School Inclusion Practices

Indicators	Mean	Std. Deviation	Interpretation
Differentiated instruction	4.441	0.576	Very High
Personalized learning strategies	4.404	0.459	Very High
Equal classroom participation	4.388	0.484	Very High
Inclusive teaching practices	4.452	0.426	Very High
Overall Mean	4.421	0.395	Very High Level

3.1.1 Differentiated Instruction

Differentiated instruction obtained a mean of 4.441, interpreted as Very High, indicating that teachers consistently adjust instruction to meet learners' diverse needs. Among the indicators, the highest-rated statement was teacher support for difficult lessons, suggesting strong responsiveness to learners' academic challenges, while the lowest-rated item related to the use of varied teaching materials, although it remained highly rated. This implies that while instructional support is highly evident, there is slightly less emphasis on diversifying materials. The findings align with studies emphasizing that differentiated instruction enhances inclusive learning by addressing learner variability. Awini (2025) reported that differentiated instruction significantly improves participation among diverse learners, while Herrera-Seda (2025) found that adaptive instructional practices strengthen inclusion across varied educational contexts. Similarly, Florian and Black-Hawkins (2022) emphasized that inclusive pedagogy relies on responsiveness rather than uniform teaching approaches.

3.1.2 Personalized Learning Strategies

Personalized learning strategies yielded a mean of 4.404, interpreted as Very High, suggesting that learners perceive instruction as tailored to their individual needs and preferences. The highest-rated statement involved receiving meaningful feedback, while the lowest-rated item related to student choice in completing tasks. This indicates that personalization is strongly evident, although learner autonomy may still be enhanced. This result supports the findings of Carlson (2025), who reported that personalized learning improves student engagement and belonging. Likewise, Inthanon (2024) found that tailoring instruction enhances equitable access and learner motivation, while Mahadew (2025) emphasized that individualized instruction fosters both inclusion and emotional connectedness.

3.1.3 Equal Classroom Participation

Equal classroom participation obtained a mean of 4.388, interpreted as Very High, indicating that learners experience fairness and inclusivity in classroom interactions. The highest-rated item focused on teacher fairness in participation, while the lowest-rated item related to equal treatment among pupils. This suggests that teachers actively promote participation, although slight perceptions of inequality among peers may still exist. The finding is consistent with Kolleck (2025), who emphasized that equitable participation is fundamental to inclusive education. Similarly, Schwab (2022) identified social participation as a core component of inclusion, while Cabardo and Dela Cruz (2021) found that cooperative learning strengthens participation and engagement among learners.

3.1.4 Inclusive Teaching Practices

Inclusive teaching practices recorded the highest mean ($M = 4.452$), interpreted as Very High, indicating that culturally responsive and inclusive

approaches are strongly implemented in the classroom. The highest-rated item involved respect for culture, while the lowest-rated item related to avoiding discrimination, although both received very high ratings. These results suggest a highly inclusive learning environment where cultural diversity is recognized and valued. The findings support the work of Alahira et al. (2024), who found that inclusive teaching practices foster empowerment and belonging among learners. Likewise, Ashrafova (2024) emphasized that culturally responsive teaching validates learner identities and promotes inclusion, while Gay (2023) highlighted the importance of integrating culture into instruction to support diverse learners.

3.1.5 Overall Level of School Inclusion Practices

Overall, school inclusion practices obtained a mean of 4.421, interpreted as Very High, indicating that inclusive practices are consistently implemented across all dimensions. This suggests that the learning environment strongly supports diversity, equity, and inclusion among learners. This finding supports Ainscow's (2020) Inclusive Education Theory, which emphasizes that inclusive practices are fundamental to equitable education systems. Similarly, UNESCO (2022) highlighted that inclusive education promotes access, participation, and success for all learners regardless of their backgrounds.

3.2 Level of Sense of Belonging among Grade 6 Tinonanon Monubu Learners

Table 3 presents the level of sense of belonging among Grade 6 Tinonanon Monubu learners in terms of cultural identity support, cultural expression encouragement, self-identity confidence, and cultural recognition. The results are discussed based on the mean, standard deviation, and corresponding interpretation.

Table 3. Level of Sense of Belonging

Indicators	Mean	Std. Deviation	Interpretation
Cultural identity support	4.528	0.389	Very High
Cultural expression encouragement	4.508	0.403	Very High
Self-identity confidence	4.521	0.489	Very High
Cultural recognition	4.546	0.408	Very High
Overall Mean	4.526	0.356	Very High Level

3.2.1 Cultural Identity Support

Cultural identity support obtained a mean of 4.528, interpreted as Very High, indicating that learners perceive their cultural background as recognized and supported within the school environment. The highest-rated indicators reflect strong affirmation of learners' cultural identity, while the lowest-rated indicators, although still rated very high, suggest slight variations in the consistency of cultural support across school situations. The finding supports the work of Lunda

(2024), who emphasized that cultural identity support strengthens students' sense of belonging and engagement. Similarly, Prehn et al. (2025) found that schools that nurture learners' cultural identities create more inclusive and supportive educational environments.

3.2.2 Cultural Expression Encouragement

Cultural expression encouragement recorded a mean of 4.508, interpreted as Very High, indicating that learners are encouraged to express their cultural identities and experiences in the classroom. The results suggest that opportunities for cultural expression are strongly supported, although certain forms of expression may be less frequently practiced. This finding is consistent with Cadenas et al. (2024), who reported that culturally responsive practices promoting expression enhance student engagement and identity development. Flores and Balagtas (2023) likewise emphasized that cultural expression strengthens participation and connectedness among Indigenous learners.

3.2.3 Self-Identity Confidence

Self-identity confidence obtained a mean of 4.521, interpreted as Very High, indicating that learners generally feel confident in their personal and cultural identity. While most respondents reported strong confidence, minor variations suggest that some learners may still require additional support in developing identity-related confidence. The result supports Fernández et al. (2023), who found that identity confidence contributes positively to students' well-being and sense of belonging. Similarly, Aslan (2025) reported that a strong sense of identity enhances school connectedness and social integration.

3.2.4 Cultural Recognition

Cultural recognition recorded the highest mean ($M = 4.546$), interpreted as Very High, indicating that learners strongly perceive that their culture is acknowledged and respected within the school environment. This finding suggests that cultural diversity is actively recognized and valued across school practices. The finding is supported by Johnson et al. (2024), who emphasized that cultural recognition plays an important role in shaping students' sense of belonging. Likewise, Ordóñez-Carabaño et al. (2025) found that intercultural values and recognition contribute significantly to student inclusion and integration.

3.2.5 Overall Level of Sense of Belonging

Overall, sense of belonging obtained a mean of 4.526, interpreted as Very High, indicating that learners strongly feel accepted, valued, and connected within their school environment. The result suggests that the participating schools foster a supportive atmosphere that promotes learners' emotional and social well-being. This finding supports Allen et al. (2021), who identified belonging as a critical component of student engagement and well-being.

Similarly, Korpershoek et al. (2020) reported that school belonging is strongly associated with positive academic and social outcomes.

3.3 Level of Social Adjustment among Grade 6 Tinonanon Monubu Learners

Table 4 presents the level of social adjustment among Grade 6 Tinonanon Monubu learners in terms of peer acceptance, social interaction skills, emotional peer support, and adjustment to school demands. The findings are discussed according to their respective indicators.

Table 4. Level of Social Adjustment

Indicators	Mean	Std. Deviation	Interpretation
Peer acceptance	4.543	0.498	Very High
Social interaction skills	4.595	0.383	Very High
Emotional peer support	4.485	0.429	Very High
Adjustment to school demands	4.605	0.413	Very High
Overall Mean	4.557	0.385	Very High Level

3.3.1 Peer Acceptance

Peer acceptance obtained a mean of 4.543, interpreted as Very High, indicating that learners generally feel accepted and valued by their peers. Although slight variations were observed, the findings suggest that positive peer relationships are strongly evident among the respondents. The finding is consistent with Plenty (2024), who emphasized that peer acceptance contributes significantly to students' social and academic development.

3.3.2 Social Interaction Skills

Social interaction skills recorded a mean of 4.595, interpreted as Very High, indicating that learners possess strong interpersonal skills and are able to interact effectively with others. The results suggest that respondents are socially competent and capable of establishing positive relationships. This finding supports Khalil et al. (2025), who emphasized that peer interaction plays a crucial role in the development of social competence and communication skills.

3.3.3 Emotional Peer Support

Emotional peer support obtained a mean of 4.485, interpreted as Very High, indicating that learners generally receive emotional support from their peers. While support appears highly evident, minor differences suggest that not all learners experience the same level of emotional connectedness. The finding aligns with van der Meulen et al. (2021), who reported that emotional support from peers contributes positively to students' social and emotional development.

3.3.4 Adjustment to School Demands

Adjustment to school demands recorded the highest mean ($M = 4.605$), interpreted as Very High, indicating that learners are generally capable of coping with academic expectations and school responsibilities. The result suggests that respondents adapt effectively to the demands of the school environment. This finding supports Wang (2025), who found that supportive school environments enhance learners' academic adjustment and adaptation.

3.3.5 Overall Level of Social Adjustment

Overall, social adjustment obtained a mean of 4.557, interpreted as Very High, indicating that learners are socially and academically well-adjusted within the school environment. The findings suggest that the schools provide conditions that support positive social development and adaptation. The result is consistent with Wang and Degol (2021), who emphasized that positive school climates significantly contribute to student adjustment and well-being.

3.4 Mediation Effects of Sense of Belonging on School Inclusion Practices and Social Adjustment

The results of the measurement model assessment demonstrate that the constructs included in the mediation model achieved acceptable levels of reliability and convergent validity, thereby supporting the adequacy of the latent variables used in the structural model. As shown in the reliability and validity table, Cronbach's alpha values ranged from 0.700 to 0.851, exceeding the minimum threshold of 0.70 recommended for internal consistency reliability (Hair et al., 2022).

Specifically, the dimensions of School Adjustment such as Academic Stress (SA-AS; $\alpha = 0.804$), Peer Adjustment (SA-PA; $\alpha = 0.851$), and Social Inclusion (SA-SI; $\alpha = 0.763$) demonstrated satisfactory reliability, indicating that the indicators consistently measured their intended constructs. Similarly, the dimensions of Sense of Belonging and School Inclusion Practices also met acceptable reliability standards, suggesting stable and coherent measurement across indicators.

Furthermore, the composite reliability (ρ_c) values ranged from 0.752 to 0.888, which are within the recommended range of 0.70 to 0.95, indicating satisfactory construct reliability without evidence of redundancy among indicators (Hair et al., 2022). The Average Variance Extracted (AVE) values ranged from 0.503 to 0.589, all surpassing the minimum criterion of 0.50, thereby confirming convergent validity. This means that each latent construct explained more than 50% of the variance of its indicators, signifying that the indicators shared a substantial proportion of common variance. Collectively, these findings establish that the measurement model possesses acceptable psychometric properties and is suitable for proceeding to the structural and mediation analyses.

Table 5. Reliability and Convergent Validity of the Constructs Used in the Mediation Model of Sense of Belonging, School Inclusion Practices, and Social Adjustment

Construct	Cronbach's α	Composite Reliability (ρ_A)	Composite Reliability (ρ_C)	AVE
SA-AS	.804	.901	.855	.505
SA-EP	.727	.729	.830	.550
SA-PA	.851	.865	.888	.570
SA-SI	.763	.763	.836	.506
SB-CE	.703	.896	.783	.554
SB-CI	.702	.707	.791	.558
SB-CR	.715	.720	.803	.579
SB-SC	.719	.746	.827	.549
SIP-DI	.709	.712	.810	.589
SIP-EP	.700	.710	.756	.523
SIP-IT	.702	.708	.752	.503
SIP-PS	.845	.856	.772	.538

The discriminant validity analysis further supports the distinctiveness of the constructs in the model. Using the Heterotrait-Monotrait Ratio (HTMT), most construct correlations were below the conservative threshold of 0.85 and the liberal threshold of 0.90 proposed by Henseler et al. (2015), indicating that the constructs are empirically distinguishable from one another.

For example, the relationships among the dimensions of School Inclusion Practices, Sense of Belonging, and School Adjustment generally remained within acceptable limits, suggesting that although conceptually related, these constructs measured different psychological and educational phenomena. This finding strengthens the conceptual clarity of the mediation model because it demonstrates that the latent variables are not redundant or excessively overlapping.

However, a few HTMT values approached or slightly exceeded the conservative threshold, particularly between closely related dimensions such as SA-AS and Social Adjustments (0.870). Although this value is relatively high, it remains below the more liberal cutoff of 0.90 and may be theoretically justified due to the conceptual proximity between academic stress and social adjustment experiences among students. Hair et al. (2022) noted that moderately high HTMT values may occur among theoretically related constructs without necessarily indicating severe discriminant validity problems.

Therefore, the overall HTMT results still support acceptable discriminant validity and confirm that the constructs maintain sufficient uniqueness within the model. Mediation is especially relevant for Indigenous learners as social adjustment is frequently shaped by the cultural acceptance, recognition of

identity, and emotional security in mainstream schools. Therefore, the sense of belonging can be a mediating variable between the practice of school inclusion and social adjustment of learners with Tinonanon Monubu origin.

The mediating role of sense of belonging between inclusive practices and student outcomes is supported by several studies, too. Korpershoek et al. (2020) explained that supportive school climates improve student adjustment primarily because learners develop feelings of acceptance and connectedness within the school environment. Likewise, Gopalan and Brady (2022) noted that belongingness functions as a psychological pathway through which inclusive educational experiences influence social and emotional development.

This means that an inclusive practice, even in the presence of inclusive practice, may not necessarily aid in promoting the social adjustment of learners if they do not feel welcome as part of the school community. In addition, a sense of belonging has been shown to be a strong predictor of social adjustment outcomes. Students who experience belongingness tend to demonstrate stronger peer relationships, better emotional regulation, and improved social interaction skills (Wang & Degol, 2021). It was highlighted that belonging within the school is correlated with positive social behaviour, psychological well-being, and adaptability of learners by Allen and Kern (2021). Similarly, Longobardi et al. (2022) found that students with high levels of school belonging exhibit healthier peer interaction and stronger adjustment to school demands.

There is research evidence that inclusive school practices like differentiated instruction, equal school participation, individualized learning approaches, and culturally responsive teaching have positive outcomes on how students feel in school (Allen et al., 2021; Gopalan & Brady, 2022). Emotional attachment and social connectedness to the school community is more likely to be developed when learners feel accepted, respected and represented in the school setting (Korpershoek et al., 2020).

Culturally responsive and inclusive spaces support Indigenous learners' identity affirmation and participation in school (Florian & Black-Hawkins, 2021). School inclusion practices, however, have been recently shown to not just affect learners' social outcomes, but also to have indirect effects through psychological pathways like a sense of belonging. In mediation, a third variable comes between the first and third variables, and it explains the relationship between them (Hayes, 2022). The sense of belonging is used as a mediating variable in this study to link the school inclusion practices with social adjustment of the learners of Tinonanon Monubu.



Table 6. Discriminant Validity Matrix of School Inclusion Practices, Sense of Belonging, and Social Adjustment

	SA-AS	SA-EP	SA-PA	SA-SI	SB-CE	SB-CI	SB-CR	SB-SC	SIP-DI	SIP-EP	SIP-IT	SIP-PS	School Inclusion Practices	Sense of Belonging	Social Adjustments
SA-AS															
SA-EP	0.817														
SA-PA	0.720	0.771													
SA-SI	0.845	0.768	0.801												
SB-CE	0.422	0.485	0.487	0.537											
SB-CI	0.587	0.590	0.514	0.573	0.771										
SB-CR	0.632	0.771	0.716	0.725	0.661	0.540									
SB-SC	0.720	0.657	0.728	0.727	0.521	0.579	0.783								
SIP-DI	0.557	0.569	0.734	0.680	0.284	0.568	0.436	0.594							
SIP-EP	0.464	0.697	0.791	0.532	0.338	0.535	0.674	0.747	0.829						
SIP-IT	0.602	0.425	0.633	0.676	0.733	0.515	0.683	0.516	0.663	0.840					
SIP-PS	0.512	0.358	0.417	0.350	0.724	0.516	0.485	0.505	0.765	0.588	0.740				
School Inclusion Practices	0.304	0.424	0.423	0.249	0.244	0.345	0.389	0.415	0.627	0.516	0.558	0.464			
Sense of Belonging	0.366	0.366	0.340	0.359	0.516	0.502	0.482	0.477	0.110	0.335	0.506	0.487	0.239		
Social Adjustments	0.870	0.628	0.493	0.527	0.088	0.324	0.442	0.456	0.284	0.393	0.384	0.274	0.213	0.129	

The collinearity assessment using the Variance Inflation Factor (VIF) revealed no issues of multicollinearity among predictor constructs in the structural model. As reflected in the VIF table, all values ranged from 1.000 to 1.060, which are substantially lower than the commonly accepted threshold of 3.0 or 5.0 (Hair et al., 2022). These findings indicate that the predictor constructs did not exhibit excessive intercorrelations that could distort the estimation of path coefficients. The absence of multicollinearity strengthens the stability and interpretability of the mediation analysis because each predictor contributes uniquely to the explanation of endogenous constructs. Consequently, the structural relationships estimated in the model can be interpreted with greater confidence.

Table 7. Collinearity Statistics (Variance Inflation Factor) of the Structural Model Constructs

Structural Path	VIF
School Inclusion Practices → Sense of Belonging	1.000
School Inclusion Practices → SIP-DI	1.000
School Inclusion Practices → SIP-EP	1.000
School Inclusion Practices → SIP-IT	1.000
School Inclusion Practices → SIP-PS	1.000
School Inclusion Practices → Social Adjustment	1.060
Sense of Belonging → SB-CE	1.000
Sense of Belonging → SB-CI	1.000
Sense of Belonging → SB-CR	1.000
Sense of Belonging → SB-SC	1.000
Sense of Belonging → Social Adjustment	1.060
Social Adjustment → SA-AS	1.000
Social Adjustment → SA-EP	1.000
Social Adjustment → SA-PA	1.000
Social Adjustment → SA-SI	1.000

Note. VIF = Variance Inflation Factor. Values below 3.30 indicate the absence of multicollinearity issues, while values below 5.00 are generally considered acceptable (Hair et al., 2022).

The structural model and mediation analysis provide important insights into the relationships among School Inclusion Practices, Sense of Belonging, and School Adjustment. The direct effect of School Inclusion Practices on School Adjustment was positive but statistically non-significant ($\beta = 0.172$, $t = 1.732$, $p = 0.083$). This finding suggests that although inclusive practices within the school environment may contribute positively to students' adjustment outcomes, their

direct influence alone is insufficient to produce a statistically meaningful effect. The small effect size ($f^2 = 0.035$) further indicates that the direct contribution of School Inclusion Practices to School Adjustment is weak. This result implies that the impact of inclusion practices on adjustment may operate indirectly through psychological and social mechanisms rather than through a purely direct pathway. In contrast, School Inclusion Practices significantly predicted Sense of Belonging ($\beta = 0.391$, $t = 4.913$, $p < .001$), with a moderate effect size ($f^2 = 0.181$). This result indicates that when students perceive their school environment as inclusive, supportive, and participatory, they are more likely to develop feelings of acceptance, connectedness, and membership within the school community. The finding aligns with belongingness theory, which posits that inclusive social environments foster stronger interpersonal attachment and institutional connectedness among individuals (Baumeister & Leary, 1995). In educational contexts, inclusive school practices may strengthen students' emotional attachment to the school by promoting equitable participation, recognition, and social support. Similarly, Sense of Belonging significantly influenced School Adjustment ($\beta = 0.453$, $t = 4.490$, $p < .001$), demonstrating the strongest direct effect in the model and a moderate effect size ($f^2 = 0.247$). This finding indicates that students who feel accepted, valued, and connected within their school community are more likely to experience positive academic, emotional, and social adjustment outcomes. Sense of belonging may serve as a protective psychological resource that enhances students' resilience, engagement, and adaptation to school demands. This result supports previous literature emphasizing that belongingness is strongly associated with academic persistence, emotional well-being, and positive school functioning (Allen et al., 2021).

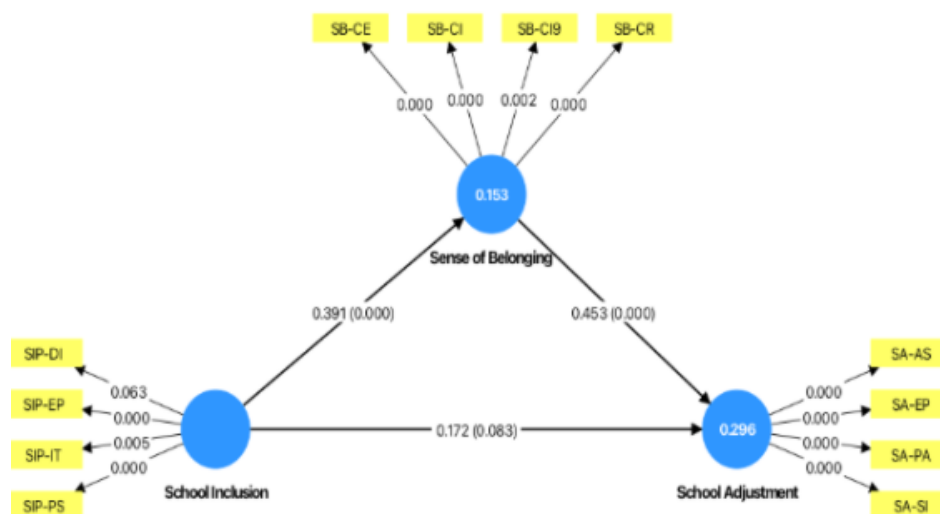


Figure 2. Structural Model of the Relationship Between School Inclusion, Sense of Belonging, and School Adjustment

Most importantly, the mediation analysis revealed a statistically significant indirect effect of School Inclusion Practices on School Adjustment through Sense of Belonging ($\beta = 0.177$, $t = 2.742$, $p = 0.006$). The significance of the indirect pathway, combined with the non-significant direct effect, suggests the presence of full mediation. This means that School Inclusion Practices improve School Adjustment primarily by enhancing students' Sense of Belonging rather than exerting a direct influence on adjustment outcomes. In other words, inclusive educational practices become effective only when they translate into students feeling psychologically connected and socially accepted within the school environment. This finding highlights the central mediating role of belongingness in transforming institutional inclusivity into positive student adjustment outcomes.

The total effect of School Inclusion Practices on School Adjustment was statistically significant ($\beta = 0.349$, $t = 4.600$, $p < .001$), indicating that inclusion practices still exert an overall positive influence on student adjustment when both direct and indirect pathways are considered together. Moreover, the R^2 value for School Adjustment was 0.296, indicating that approximately 29.6% of the variance in School Adjustment was explained by School Inclusion Practices and Sense of Belonging. According to Hair et al. (2022), this reflects a moderate level of explanatory power in social science research, suggesting that the model meaningfully explains students' adjustment experiences while acknowledging that other contextual and psychological variables may also contribute.

The mediation model therefore provides important theoretical and practical implications. Theoretically, the findings support ecological and psychosocial perspectives emphasizing that students' adjustment outcomes are shaped not only by institutional practices but also by their subjective experiences of connectedness and acceptance within educational environments. Practically, the findings suggest that schools seeking to improve student adjustment should move beyond merely implementing inclusive policies and instead focus on cultivating authentic experiences of belonging among students. Inclusive practices become most effective when students genuinely perceive themselves as valued members of the school community. Thus, interventions aimed at strengthening peer relationships, teacher support, student participation, and inclusive school culture may significantly enhance students' academic and psychosocial adjustment.

Table 8. Direct, Indirect, and Total Effects of School Inclusion Practices on School Adjustment Mediated by Sense of Belonging

Direct Effects	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values	f-square
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	(O/STD EV)					
School Inclusion -> School Adjustment	0.172	0.178	0.099	1.732	0.083	0.035
School Inclusion -> Sense of Belonging	0.391	0.431	0.080	4.913	0.000	0.181
Sense of Belonging -> School Adjustment	0.453	0.469	0.101	4.490	0.000	0.247
Indirect Effects	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STD EV)	P values	-
School Inclusion -> School Adjustment	0.177	0.204	0.065	2.742	0.006	-
Total Effects	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STD EV)	P values	
School Inclusion -> School Adjustment	0.349	0.382	0.076	4.600	0.000	
	R-square	R-square adjusted				
School Adjustment	0.296	0.284				

Based on the results, School Inclusion Practices did not significantly and directly influence School Adjustment ($\beta = 0.172$, $p = 0.083$). It means that inclusive school practices were not directly related to the prediction of learners' social adjustment. The School Inclusion Practices were, however, a significant

influence on Sense of Belonging, $\beta = 0.391$, $p = 0.000$; and in inclusive environments, learners feel accepted, connected, and involved in the school community. In turn, Sense of Belonging significantly influenced School Adjustment ($\beta = 0.453$, $p = 0.000$) which means that students who felt better belongingness showed better peer relationships, emotional adjustment and adaptation to school demands. These findings support the argument of Allen and Kern (2021) that school belonging is a strong predictor of students' social and emotional functioning.

In addition, the indirect effect of School Inclusion Practices on School Adjustment via Sense of Belonging was significant ($\beta = 0.177$, $p = 0.006$). This supports the mediating effect of Sense of Belonging between School Inclusion Practices and School Adjustment. The total effect $\beta = 0.349$, $p = 0.000$, is also significant, showing that the inclusion of school practices has a significant impact on the adjustment of learners, mainly in strengthening the sense of belonging. These findings are consistent with the study of Korpershoek et al. (2020), which emphasized that supportive and inclusive school climates improve student adjustment through psychological connectedness and belongingness. The R-square value of 0.296 also shows that the mediation model explains about 29.6% of the variance in School Adjustment, which suggests that the constructs in the study have a moderate explanatory power in the context of mediation models.

4. Conclusions

This study examined the mediating role of sense of belonging in the relationship between school inclusion practices and social adjustment among Grade 6 Tinonanon Monubu learners using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings confirmed that the measurement and structural models met acceptable reliability and validity standards, and no multicollinearity issues were detected. Results showed that school inclusion practices did not significantly and directly influence social adjustment. However, school inclusion practices significantly predicted sense of belonging, and sense of belonging significantly predicted social adjustment. Furthermore, the indirect effect of school inclusion practices on social adjustment through sense of belonging was significant, indicating that sense of belonging fully mediated the relationship between the two constructs. These findings suggest that inclusive school practices contribute to learners' social adjustment primarily by fostering feelings of acceptance, connectedness, and membership within the school community. The model explained a moderate proportion of the variance in social adjustment, highlighting the importance of both school inclusion practices and sense of belonging in supporting positive adjustment outcomes. Overall, the study underscores the importance of creating inclusive, supportive, and culturally responsive school environments that strengthen learners' sense of belonging. The findings contribute to the growing body of literature on inclusive education and

provide practical implications for educators, school leaders, and policymakers seeking to enhance the social adjustment and well-being of Indigenous learners.

5. Recommendations

Based on the findings, schools should strengthen inclusive educational practices that promote equity, participation, and student engagement to foster a stronger sense of belonging among learners. School administrators and policymakers are encouraged to implement programs that enhance students' connectedness and attachment to the school community, such as mentorship programs, peer integration activities, and inclusive extracurricular engagements. Teachers should likewise adopt inclusive and culturally responsive pedagogical approaches that create supportive, respectful, and participatory classroom environments where learners feel valued and accepted. Guidance counselors and student affairs practitioners should develop psychosocial interventions that support students' social integration, emotional well-being, and adjustment. Future researchers are encouraged to examine additional factors influencing social adjustment, such as peer support, teacher support, academic motivation, resilience, and family environment. They may also employ larger and more diverse samples, longitudinal designs, or mixed-methods approaches to provide deeper insights into the relationships among school inclusion practices, sense of belonging, and social adjustment.

6. Limitations of the Study

Several limitations should be considered when interpreting the findings. First, the study employed a cross-sectional design, which limits the ability to establish causal relationships among the variables. Second, the use of self-reported survey data may have introduced response biases, such as social desirability and subjective interpretation of questionnaire items. Third, the study focused only on school inclusion practices, sense of belonging, and social adjustment, leaving other potentially influential factors unexplored. Furthermore, the findings may have limited generalizability because the participants were drawn from a specific cultural and educational context. Finally, although PLS-SEM was appropriate for examining the proposed mediation model, the results remain dependent on the adequacy of the theoretical framework and measurement instruments. Future studies are encouraged to use longitudinal designs, multiple data sources, larger and more diverse samples, and additional variables to further validate and extend the findings.

Supplementary Details

Supplementary Materials & Data availability statement (If Applicable):

The data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly



available to protect the privacy and confidentiality of the research participants and comply with applicable ethical and institutional guidelines.

Author Contributions:

Dolly N. Laus and Lea S. Arangote led the conceptualization, methodology, data curation, and project administration, with Elaiza Mae S. Sienes contributing to the methodology and the original draft preparation. Nelson Navaja and Hannah Mae E. Suarez were responsible for validation, while Dolly N. Laus and Jade B. Tejada conducted the formal analysis. All authors participated in the investigation and manuscript review and editing. Kezziah Alcosaba, Rodelie T. Gonzales, and Alinel T. Angcog contributed to visualization, and Dianne Mariz O. Tanudtanud provided supervision and co-managed the project administration.

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Informed Consent Statement:

The study adhered to ethical standards in research involving human participants. Prior to data collection, participants were provided with a comprehensive informed consent form detailing the purpose of the study, procedures, potential risks and benefits, confidentiality measures, and their rights, including voluntary participation and the option to withdraw at any time without

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Conflicts of Interest:

The authors declare no conflict of interest.

Disclosure Statement:

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