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DIGITAL SELF-EFFICACY, TRADITIONAL BARRIERS, AND PARENTAL INVOLVEMENT IN RELATION TO STUDENT OUTCOMES IN MATALAM NORTH DISTRICT

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ABSTRACT

This quantitative study investigated the levels of digital self-efficacy, traditional barriers to parental involvement, parental involvement, and perceived student outcomes among parents in public secondary schools of Matalam North District, North Cotabato, Philippines. Using a descriptive-correlational, cross-sectional design, 286 parents were selected through stratified random sampling across four schools. A validated five-point Likert-scale questionnaire was administered. Results showed high digital self-efficacy (M = 4.02), with parents most confident in basic mobile communication (M = 4.32) but less so in app troubleshooting (M = 3.76). Traditional barriers were at a moderate level (M = 3.01), dominated by work schedule conflicts. Parental involvement was high (M = 3.58), strongest in teacher collaboration (M = 3.92) but weakest in physical attendance (M = 3.03). Perceived student outcomes were also high (M = 4.03), with greatest gains in children's motivation to study (M = 4.17). Significant positive correlations were found among parental involvement, digital efficacy, and student outcomes. Traditional barriers significantly correlated with parental involvement but not with student outcomes. These findings underscore the primacy of parental engagement as a driver of student success in rural agricultural communities and point to the need for targeted digital literacy training and flexible school engagement models.

KEYWORDS: *digital self-efficacy; traditional barriers; parental involvement; student outcomes; Matalam North District; rural Philippines*

INTRODUCTION

Parental involvement in education is a well-established determinant of student success, shaping academic achievement, attendance, and socioemotional development. In rural Philippine contexts like the Matalam North District of North Cotabato, however, traditional barriers—including work schedule conflicts arising from agricultural livelihoods, geographic distances, and scheduling misalignments—restrict involvement to sporadic, one-way communication and limit genuine home-school collaboration (Garcia et al., 2025). These conditions are particularly acute for farming families who form the socioeconomic majority of the district's population.

Educational technology (EdTech) offers a promising pathway for overcoming these barriers. Real-time apps, AI-driven platforms, and mobile school portals enable flexible two-way communication that bypasses physical and temporal constraints (Sheldon & Epstein, 2005). However, the effectiveness of these tools depends critically on parents' digital self-efficacy—their confidence in using technology for school-home communication. As Bandura (1986, 2001) posits through Social Cognitive Theory, perceived competence drives sustained behavioral engagement; without sufficient digital confidence, parents underutilize available EdTech tools.

Despite growing international evidence on these relationships, localized evidence from Mindanao's agricultural communities remains scarce (De Los Reyes & Orongan, 2024). This study fills that gap by quantitatively describing the levels of digital self-efficacy, traditional barriers, parental involvement, and student outcomes, and by examining significant relationships among these variables among parents in Matalam North District public secondary schools. The study is grounded in Epstein's (2010) School-Family-Community Partnership Model and Bandura's (1986) Social Cognitive Theory.

MATERIALS AND METHODS

Research Design. A descriptive-correlational, cross-sectional research design was employed to describe variable levels and test relationships among digital self-efficacy, traditional barriers, parental involvement, and student outcomes.

Locale and Respondents. The study was conducted in Matalam North District, Municipality of Matalam, North Cotabato, Philippines—a predominantly agricultural rural area. Respondents were 286 parents of secondary public school students across four schools: Latagan High School (n = 43), Matalam National High School Linao (n = 100), Sarayan High

School (n = 86), and Sta. Maria High School (n = 57), selected through stratified random sampling from a population of 1,000.

Instrument. A validated five-point Likert-scale questionnaire—adapted from Joshi et al. (2015)—measured digital self-efficacy (7 items), traditional barriers (8 items), parental involvement (8 items), and perceived student outcomes (7 items). Items were presented in both English and Hiligaynon to enhance accessibility for respondents with limited English proficiency.

Data Collection. The researcher personally administered and collected questionnaires, providing verbal explanations to ensure comprehension and minimize non-response bias (Fowler, 2014).

Statistical Analysis. Descriptive statistics (means, standard deviations) described variable levels. Pearson's r correlation coefficients tested relationships among variables at the 0.05 significance level, using 286 degrees of freedom.

RESULTS AND DISCUSSION

Level of Digital Self-Efficacy

Parents demonstrated high digital self-efficacy (M = 4.02, SD = 0.79). The highest-rated item was confidence in using mobile phones for school-related calls and texts (M = 4.32, Strongly Agree), reflecting strong foundational mobile literacy. Conversely, the ability to independently troubleshoot school app problems received the lowest rating (M = 3.76, Agree), indicating a developmental gap in advanced EdTech competence. These findings are consistent with Harris (2021), who documented that rural parents exhibit high basic mobile proficiency alongside moderate troubleshooting gaps, and align with Bandura's (1986) self-efficacy theory, which positions perceived competence as the primary driver of technology adoption.

Table 1. Summary of Digital Self-Efficacy Levels.

Indicator	Mean	SD	Description
Mobile phone confidence for school matters	4.32	0.86	Strongly Agree
Messaging apps for school communication	4.06	0.97	Agree
School app/portal for grades and attendance	4.05	0.96	Agree
Independent app troubleshooting	3.76	1.11	Agree
Learning new apps with short demonstration	3.94	1.03	Agree
Sending messages/updates using digital tools	3.99	1.05	Agree
Technology skills support school participation	4.03	0.93	Agree
Grand Mean	**4.02**	**0.79**	**High**

Level of Traditional Barriers

Traditional barriers were at a moderate level overall (M = 3.01, SD = 1.01). Work schedule conflicts (M = 3.12) and activity timing misalignments with household duties (M = 3.07) were the most prevalent barriers. Geographic distance and transportation issues were comparatively less impactful (M = 2.81–3.02), establishing economic livelihood pressures—rather than geographic isolation—as the primary constraint. These findings parallel Delos Reyes (2023), who documented that agricultural schedules cause 65–70% non-attendance at school events in Mindanao, and align with Zhang (2025), who positioned economic survival as the overriding priority in rural communities.

Table 2. Traditional Barriers to Parental Involvement (ranked by mean).

Barrier	Mean	SD	Description
Work schedule prevents meeting attendance	3.12	1.31	Moderately Agree
Activity timing conflicts with duties	3.07	1.33	Moderately Agree
Farming/livelihood prevents attendance	3.02	1.30	Moderately Agree
Poor weather/road conditions	3.02	1.29	Moderately Agree
Long travel time discourages participation	3.02	1.28	Moderately Agree
Home-school distance makes visits challenging	3.00	1.28	Moderately Agree
Lack of reliable transportation	2.93	1.35	Moderately Agree
Collecting report cards/documents challenging	2.81	1.29	Moderately Agree
Grand Mean	**3.01**	**1.01**	**Moderate**

Level of Parental Involvement

Parental involvement was high (M = 3.58, SD = 0.82). The highest-rated item was collaboration with teachers on academic and behavioral issues (M = 3.92), followed by providing feedback on student progress (M = 3.75). Physical attendance at school meetings was weakest (M = 3.03) due to logistical constraints. This pattern is consistent with Cauilan and Salazar (2023), who found that rural Philippine parents demonstrate consistent engagement in home-based and collaborative practices while struggling with voluntary attendance. Epstein (2011) similarly notes that robust two-way communication and home-based strategies sustain meaningful involvement even without frequent in-person visits.

Level of Perceived Student Outcomes

Student outcomes were perceived as high (M = 4.03, SD = 0.87). The highest gains were in children's desire to study more and noticeable academic success (M = 4.17 each). Behavioral improvement (M = 4.09) and kindness/happiness (M = 4.15) also rated highly. Homework completion and attendance reduction posted comparatively lower means (M = 3.82 each), suggesting that motivational and affective gains precede improvements in routine academic behaviors. Fan and Chen (2014) similarly found that parental involvement most strongly predicts affective outcomes, while Castro et al. (2015) confirmed moderate-to-strong effects across all outcome domains.

Relationship Among Variables

Table 3 presents the Pearson correlation results. Parental involvement showed a strong significant positive correlation with student outcomes ($r = 0.580$, $p < .001$), identifying family engagement as the strongest predictor of student success. Digital efficacy was significantly and positively correlated with both parental involvement ($r = 0.368$, $p < .001$) and student outcomes ($r = 0.423$, $p < .001$), affirming that parents' technological confidence amplifies their engagement and its downstream benefits. Traditional barriers were significantly related to parental involvement ($r = 0.195$, $p < .001$), suggesting that barrier awareness may motivate compensatory engagement strategies, but showed no significant correlation with student outcomes ($r = -0.066$, $p = .235$), confirming that involvement's positive impact is resilient to structural constraints.

Table 3. Pearson Correlation Matrix Among Study Variables (df = 286).

Variable	Dig. Efficacy	Trad. Barriers	Par. Involvement	Student Outcomes
Digital Efficacy	—		.368***	.423***
Traditional Barriers		—	.195***	-.066
Parental Involvement			—	.580***
Student Outcomes				—

***p < .001

CONCLUSION

Parents in Matalam North District demonstrate high digital self-efficacy and parental involvement despite moderate traditional barriers, and perceive high positive student outcomes. Work schedule conflicts and livelihood demands are the primary barriers, overriding geographic isolation as the dominant constraint. Parental involvement is the strongest predictor of student outcomes, particularly in motivational and affective domains. Digital self-efficacy significantly correlates with both involvement and outcomes, establishing technology confidence as a meaningful enabler. Traditional barriers do not directly reduce student outcomes, suggesting parental commitment transcends structural limitations. Schools should offer targeted digital literacy training, adopt flexible asynchronous engagement formats, and coordinate with agricultural calendars to further empower parental involvement in this rural context.

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